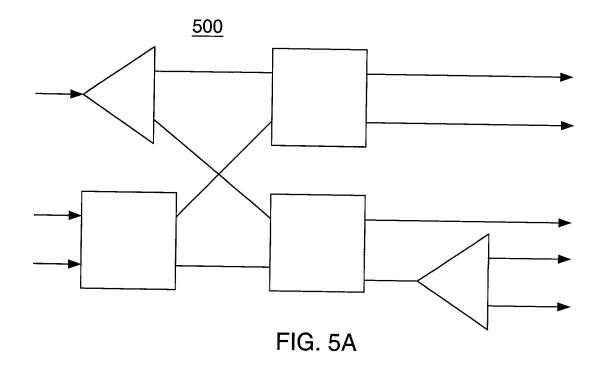
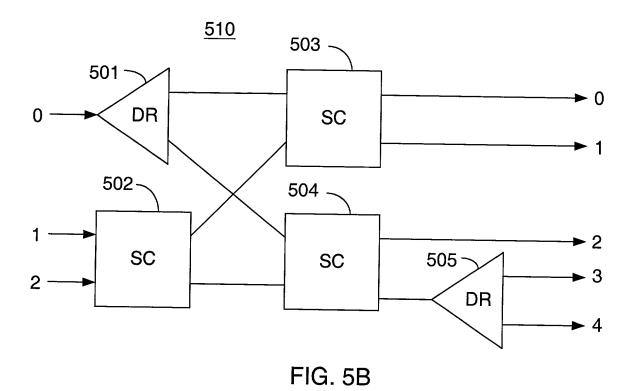


FIG. 4





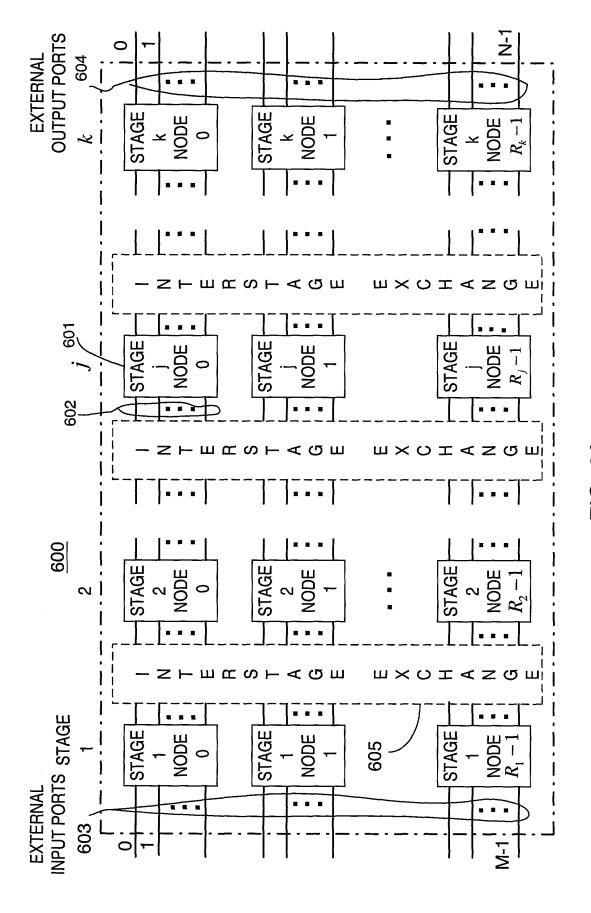
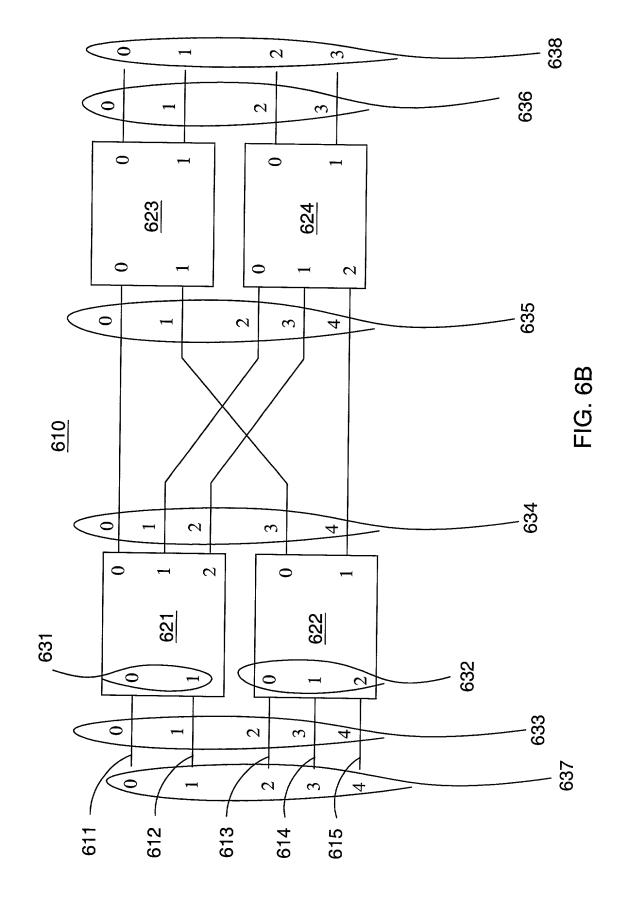
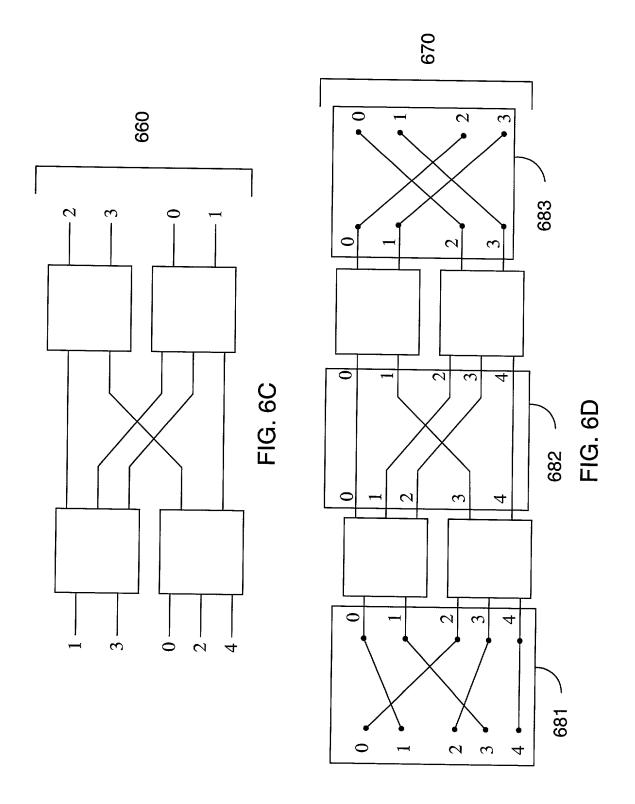
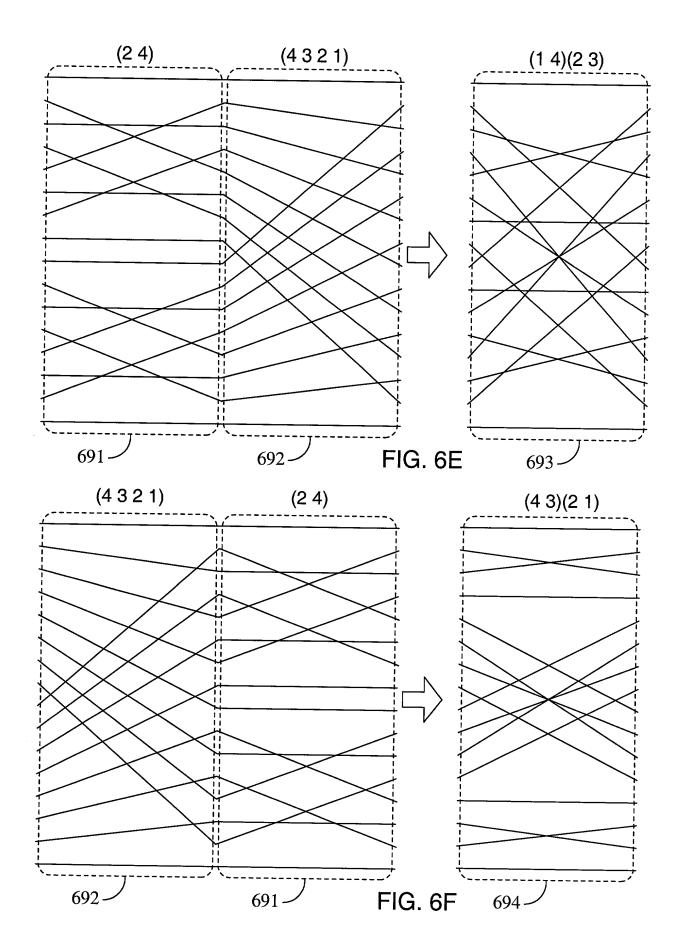
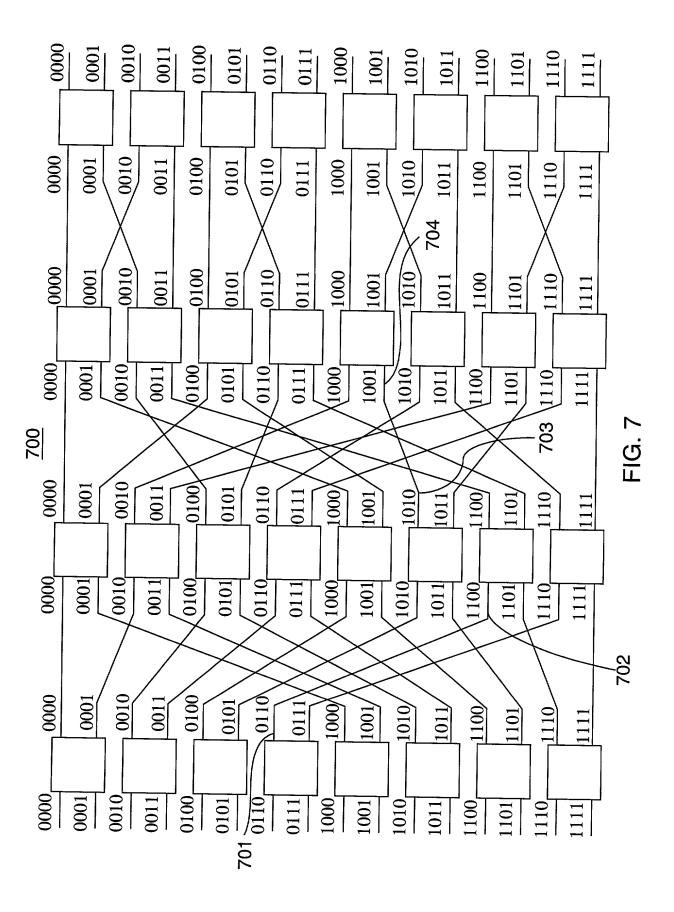


FIG. 6A

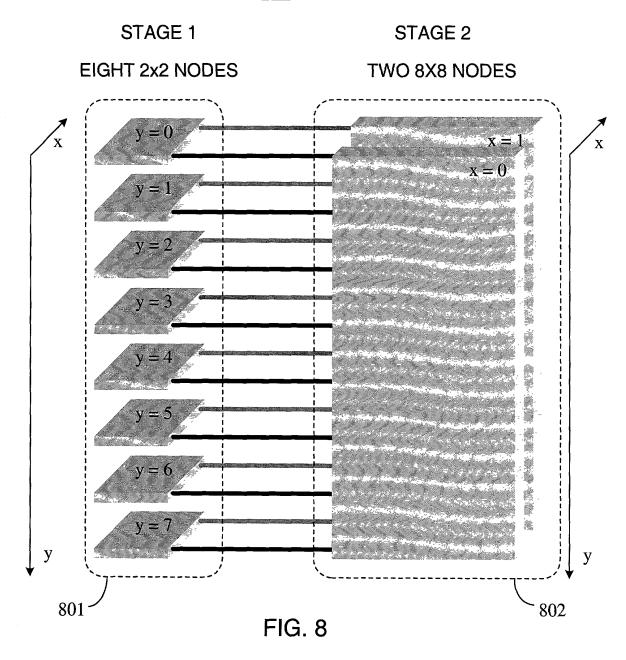


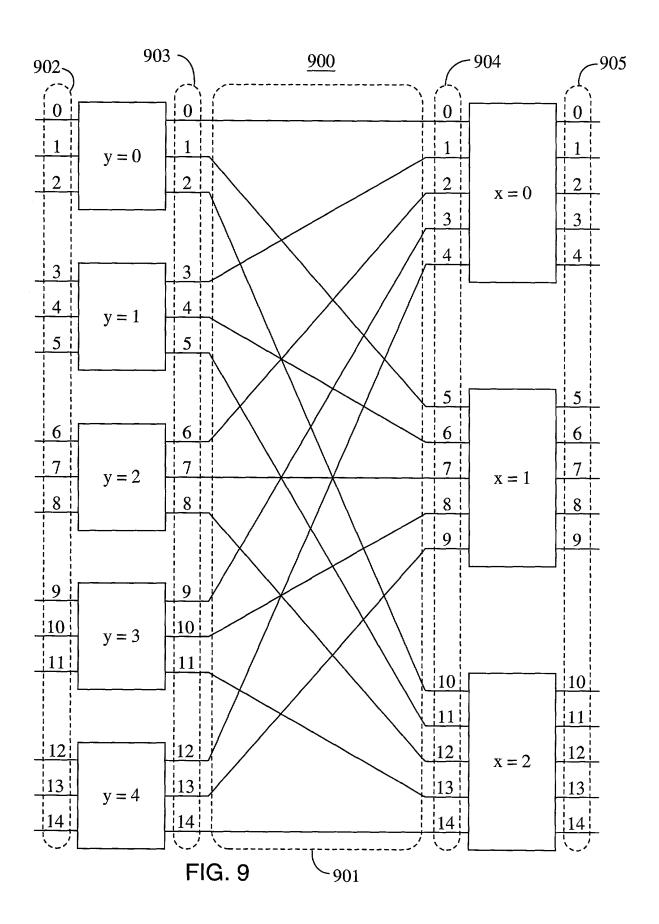


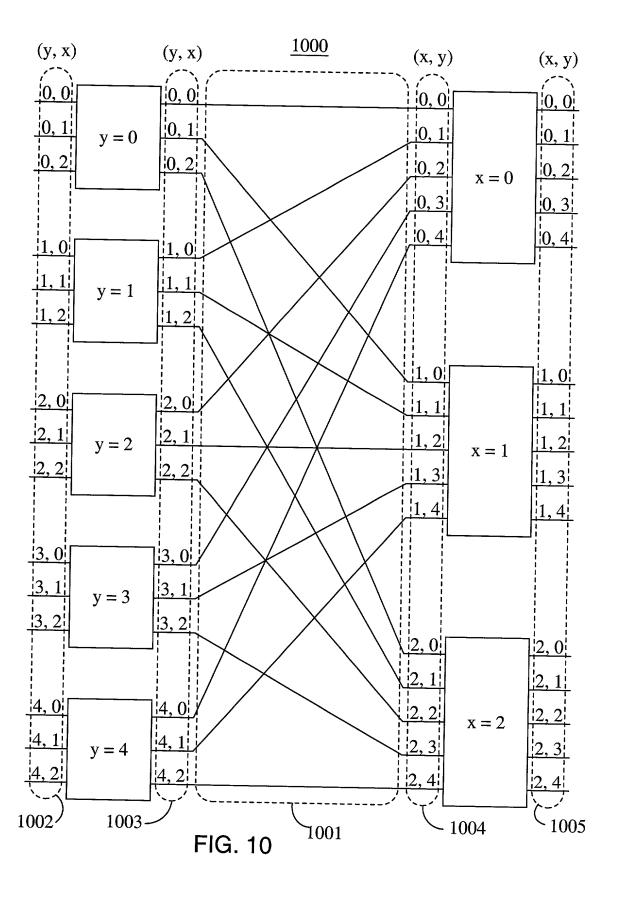


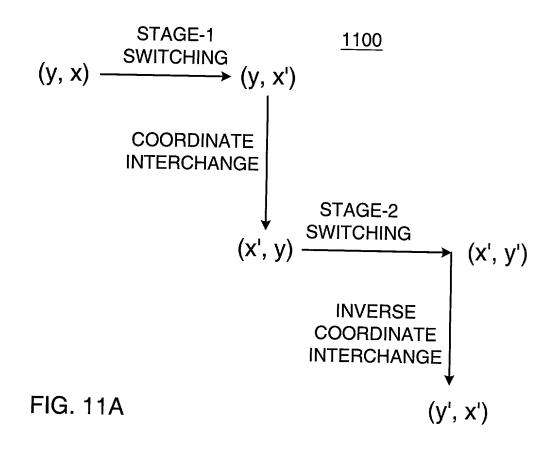


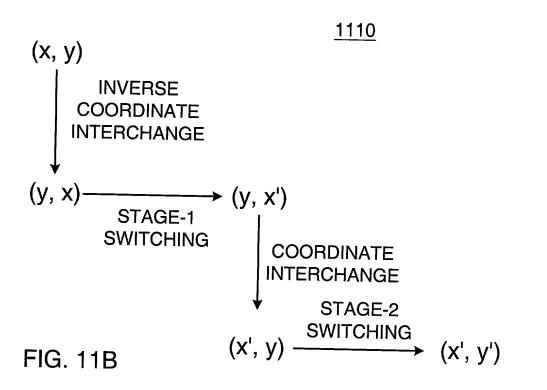


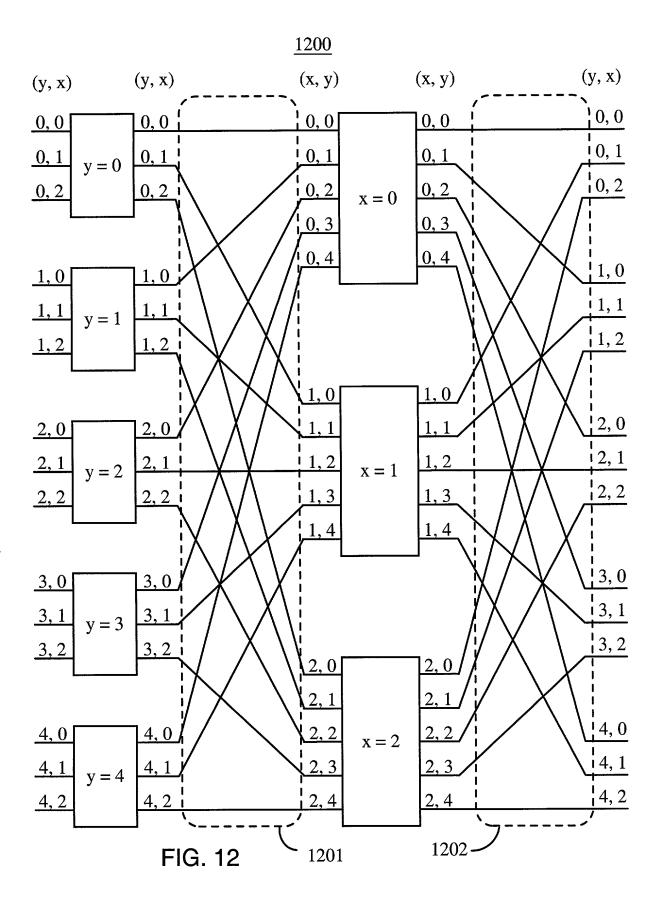


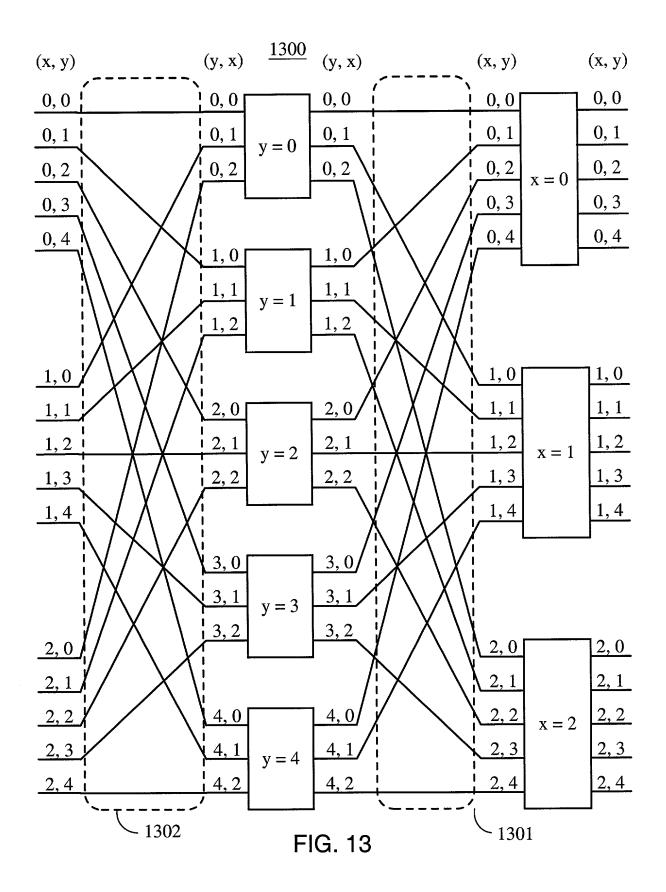


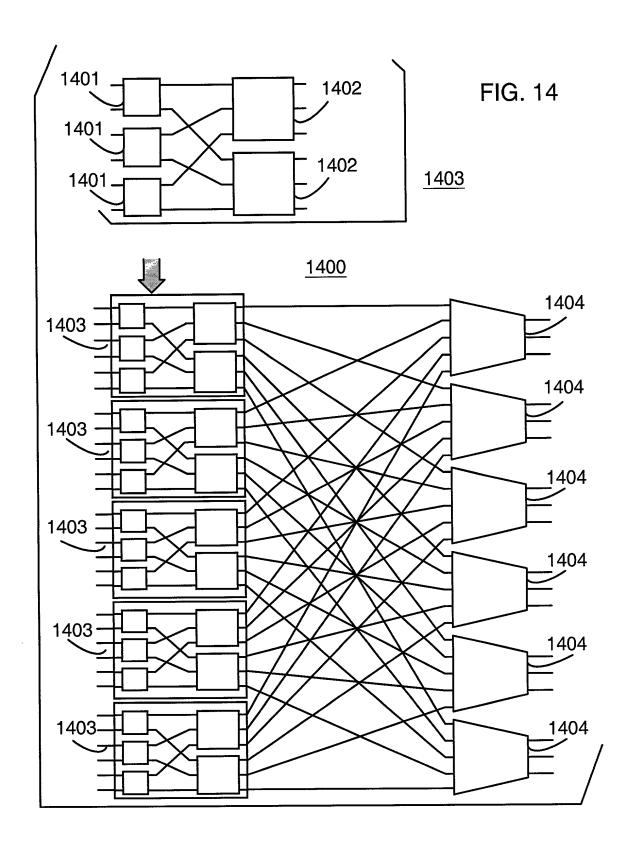












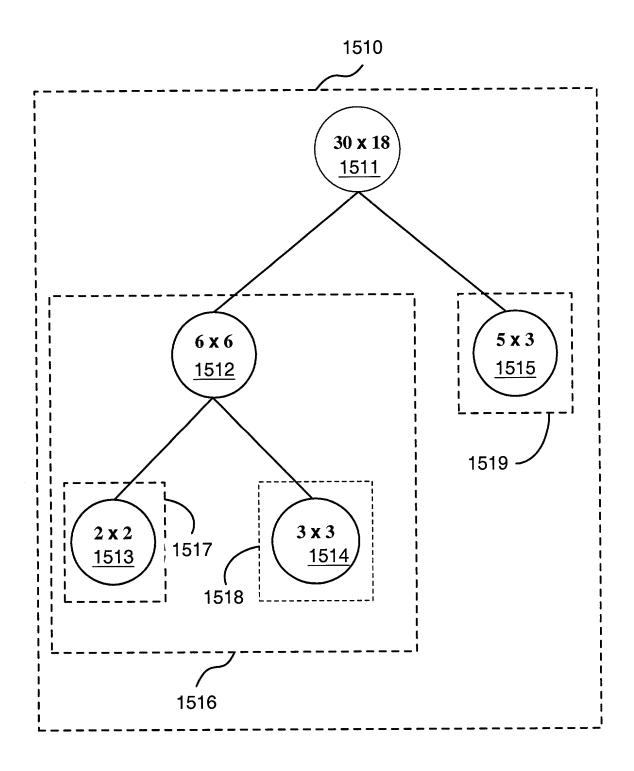
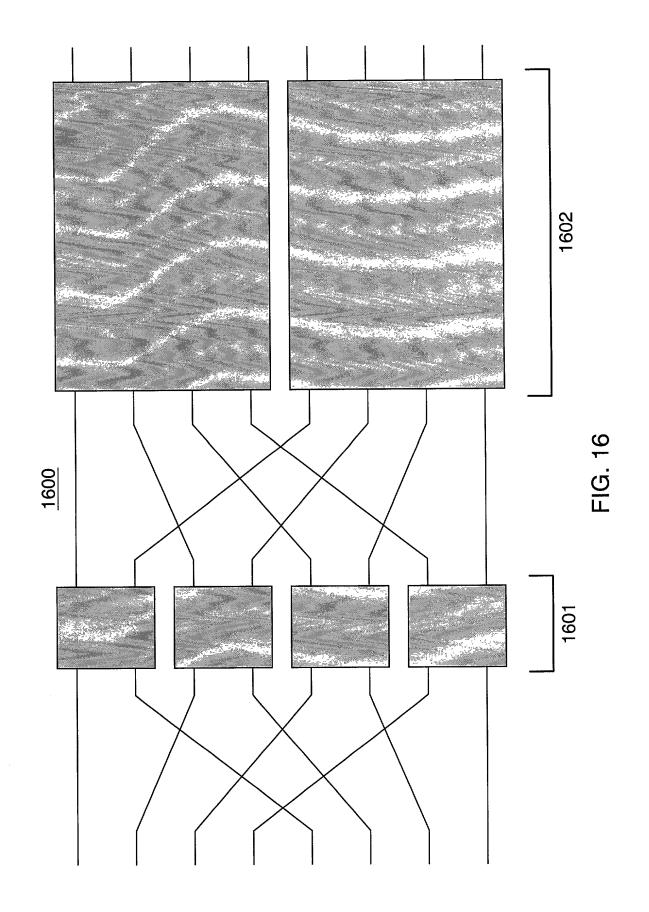
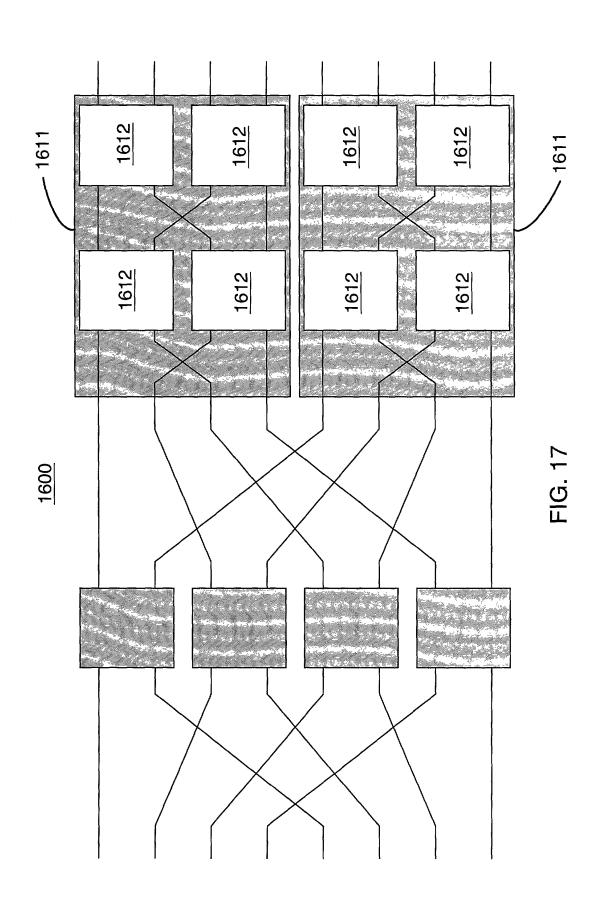
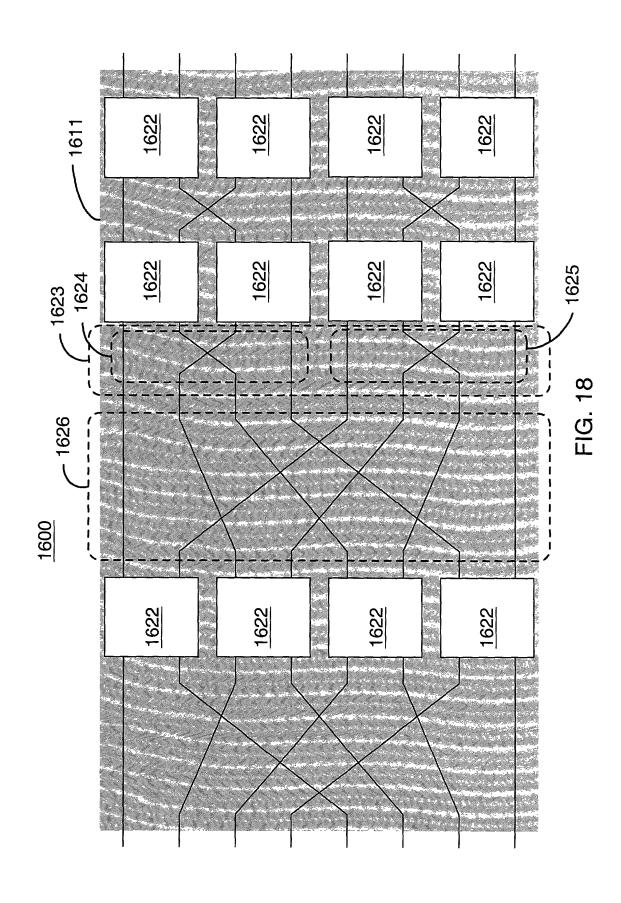
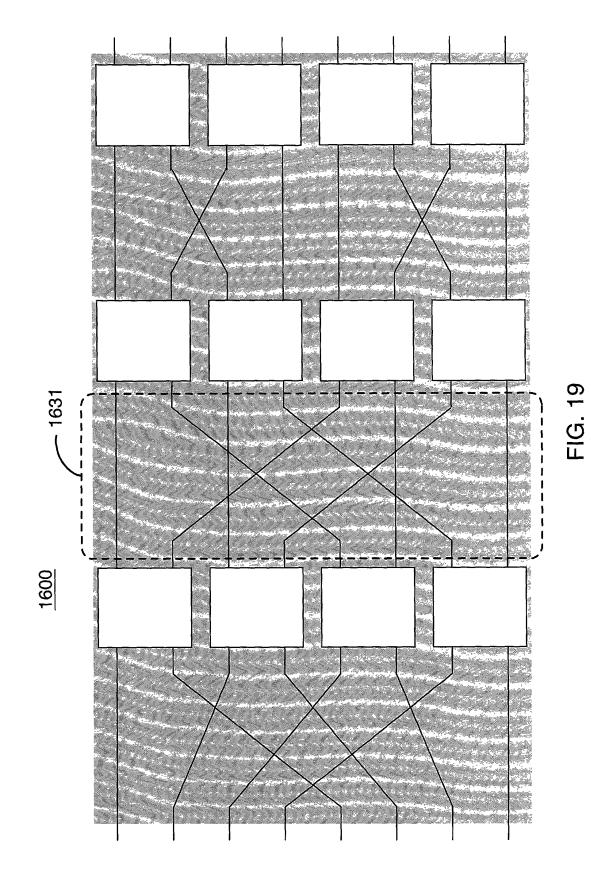


FIG. 15











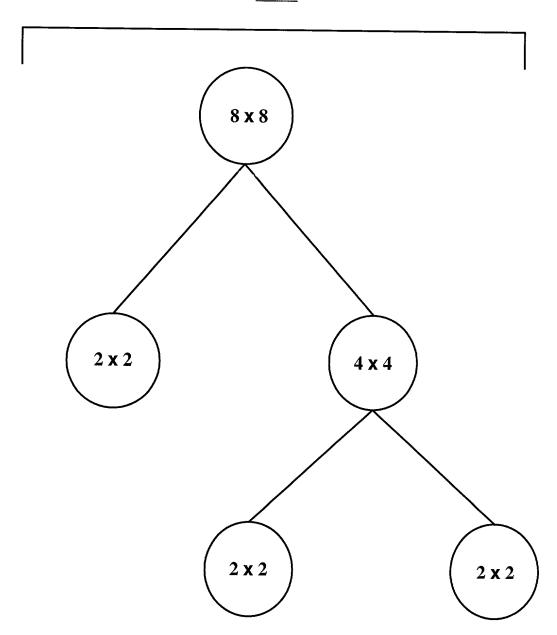
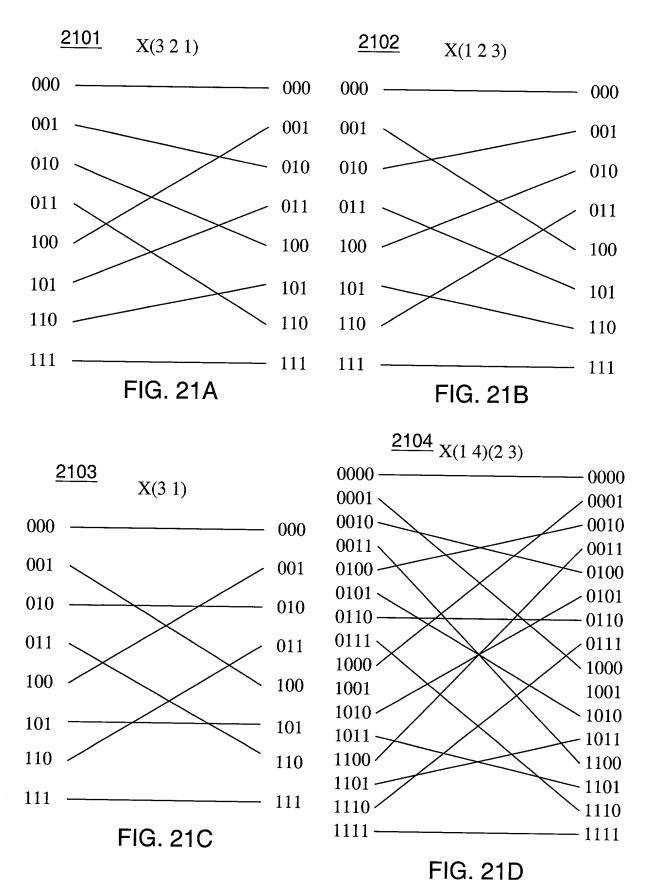
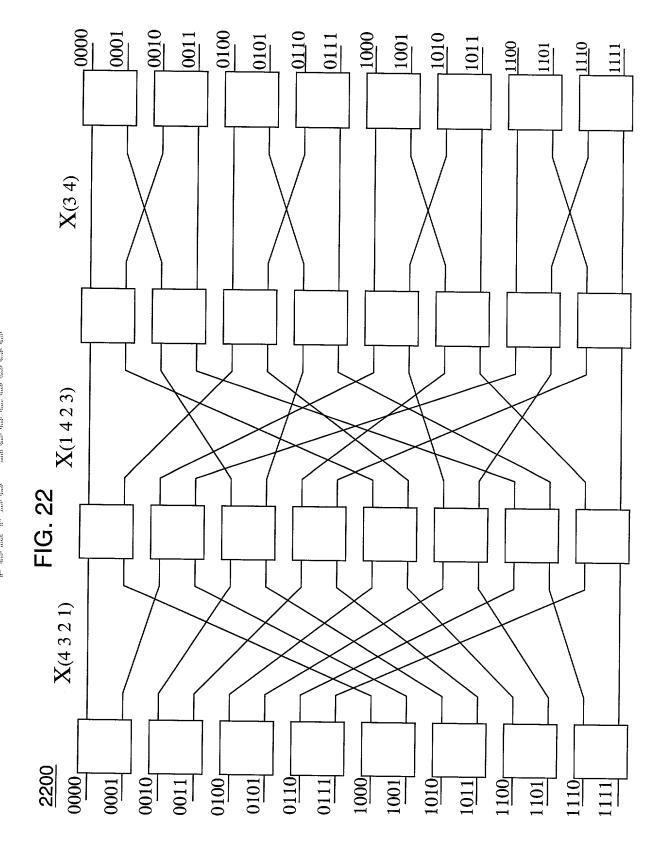
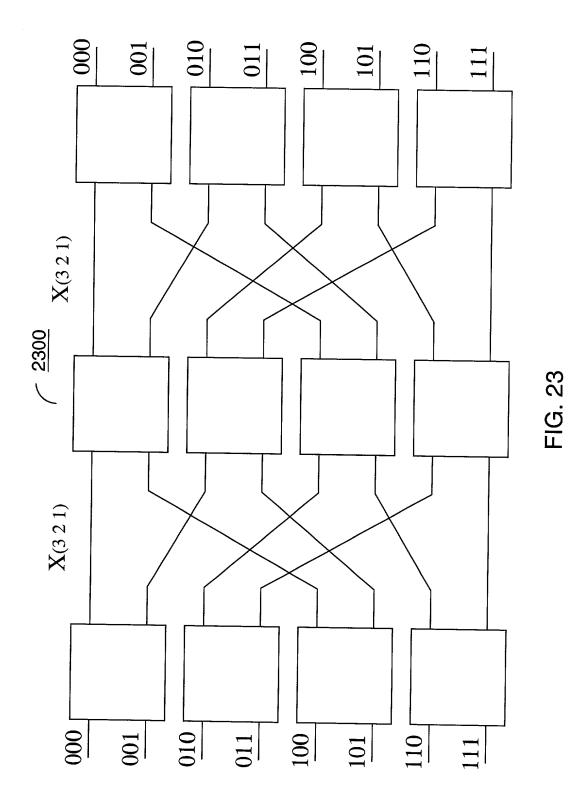


FIG. 20







<u>2400</u>

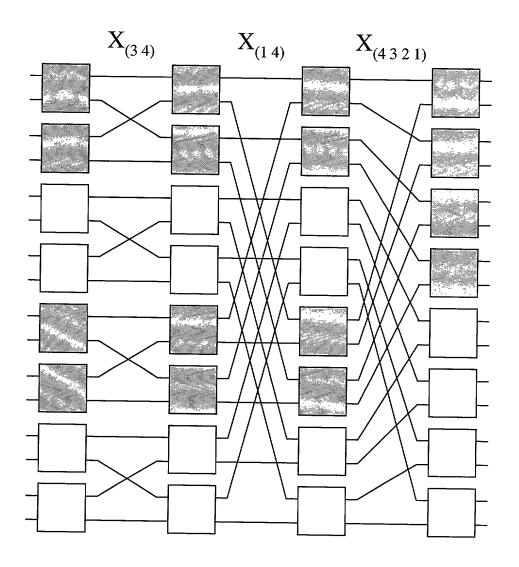
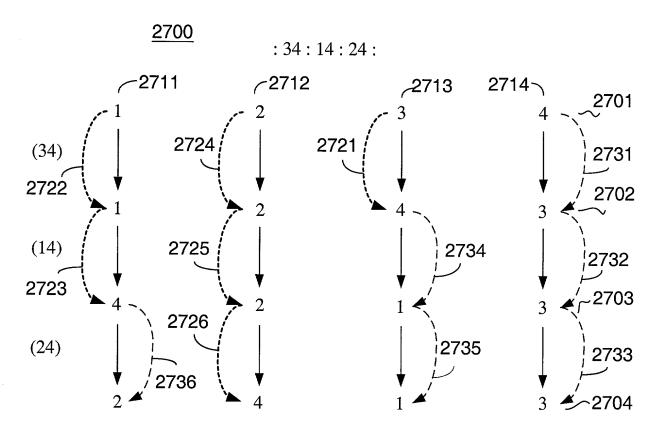


FIG. 24



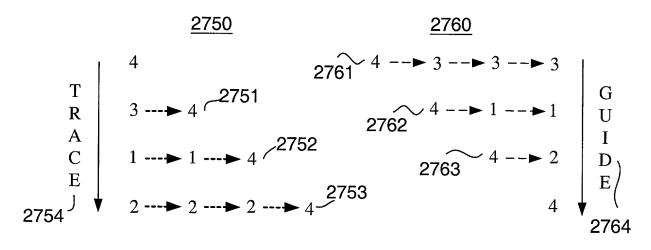


FIG. 27

FIG. 28A

FIG. 28B

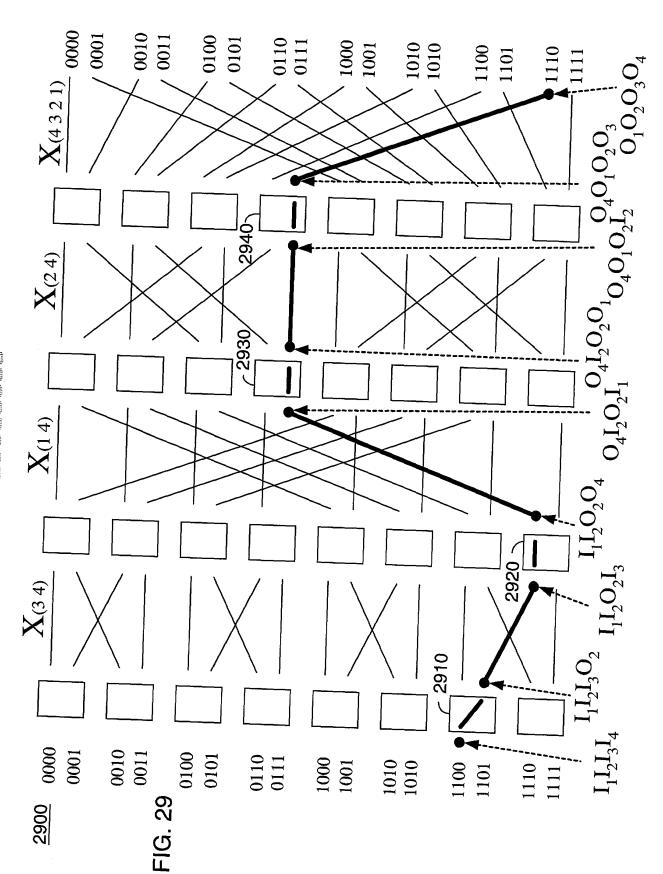
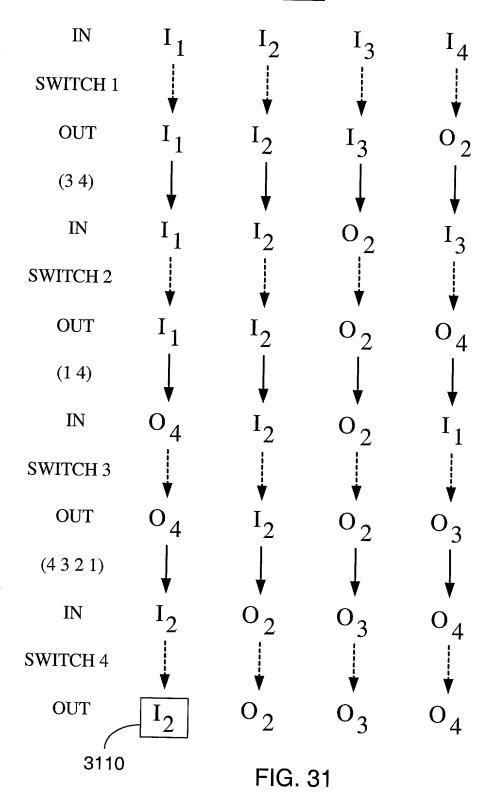
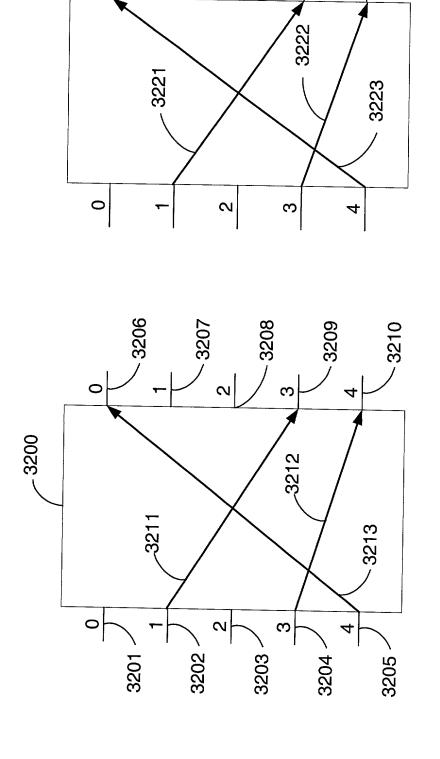


FIG. 30A

FIG. 30B

<u>3100</u>





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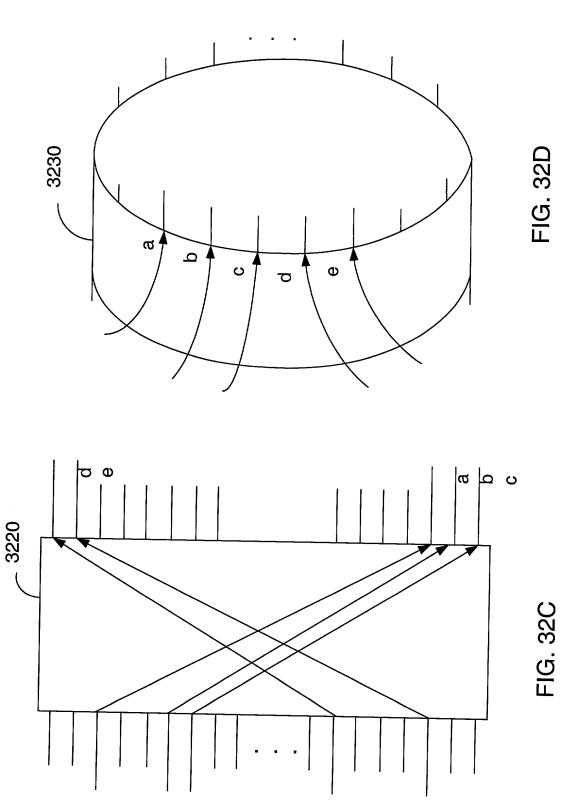
က

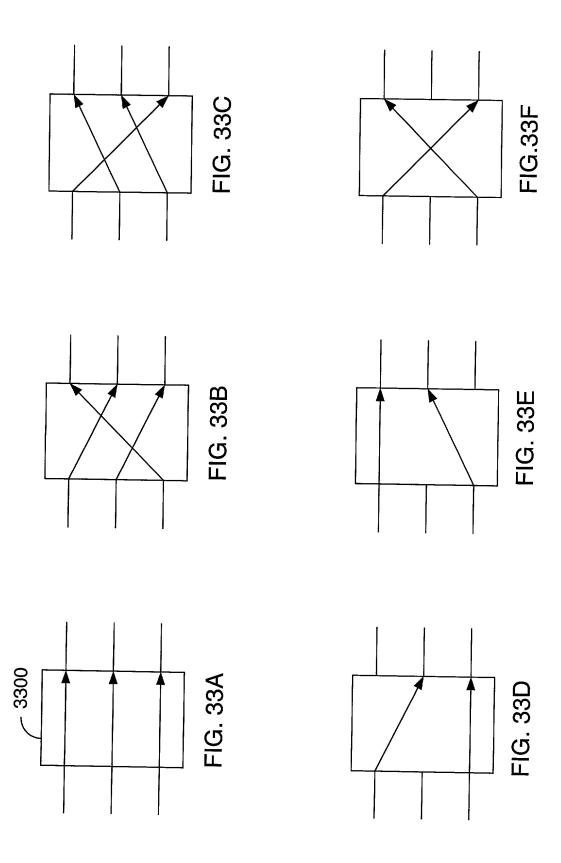
0

4

FIG. 32B

FIG. 32A





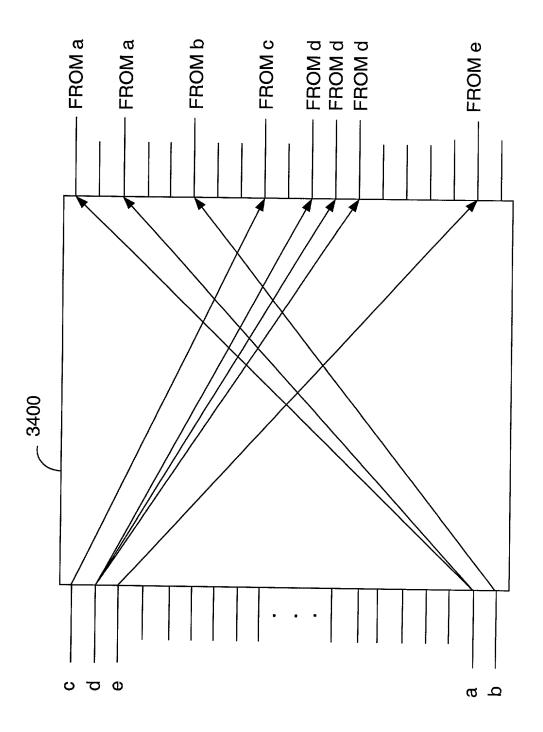
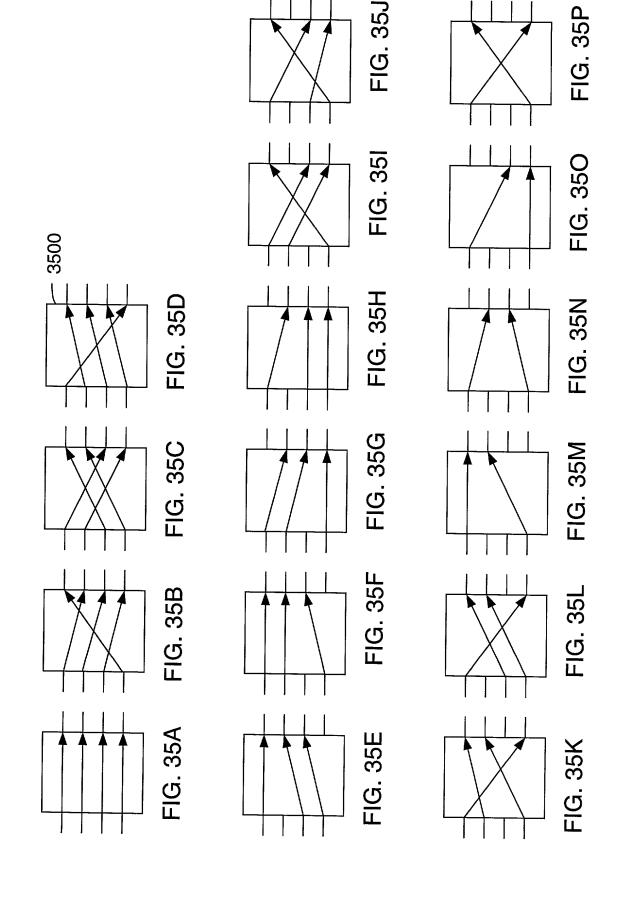
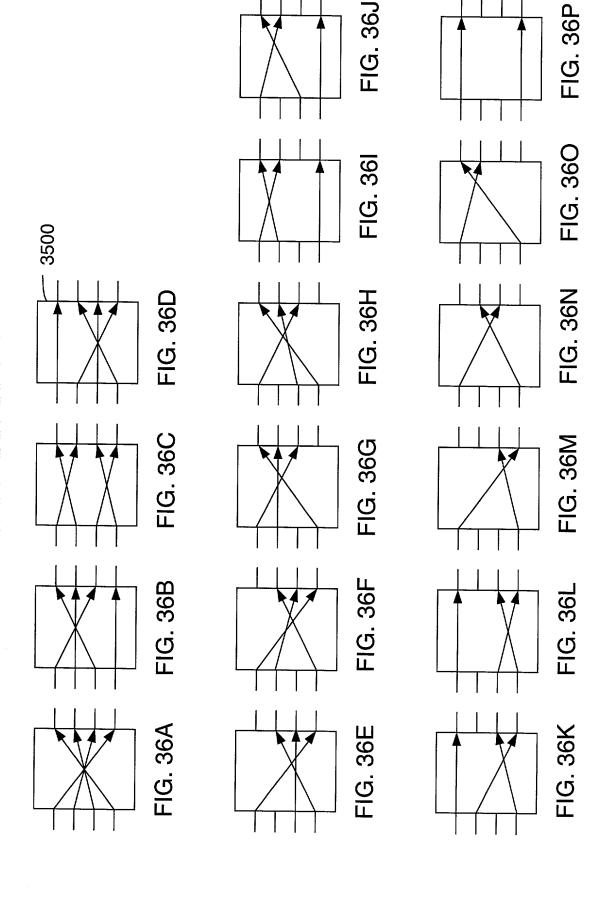
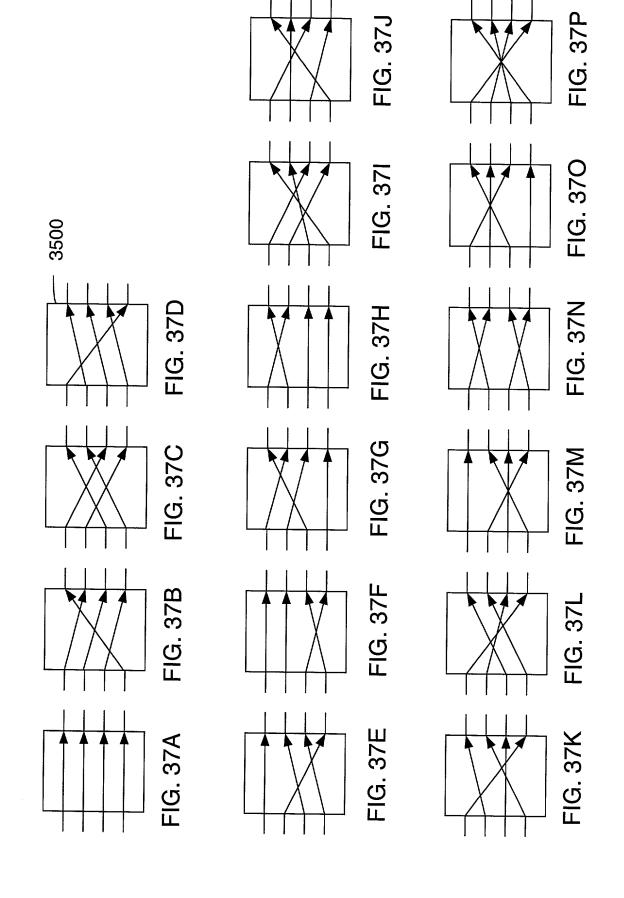
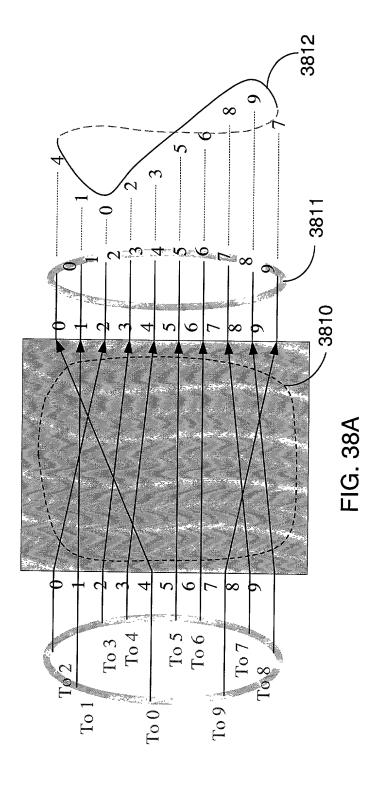


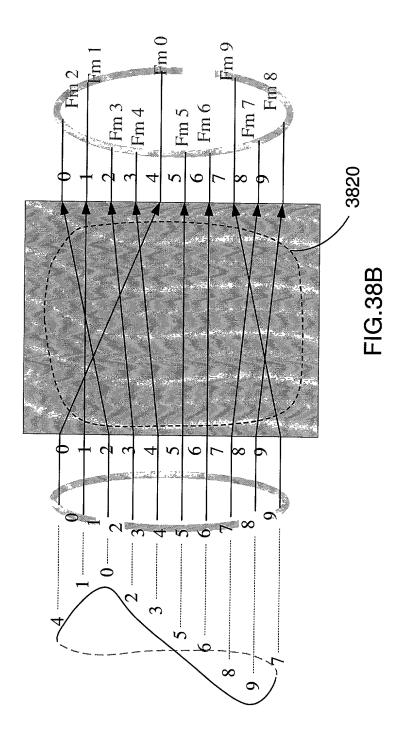
FIG. 34











3900

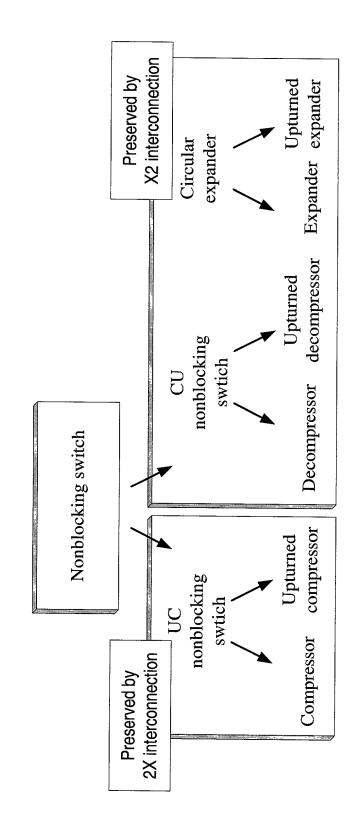
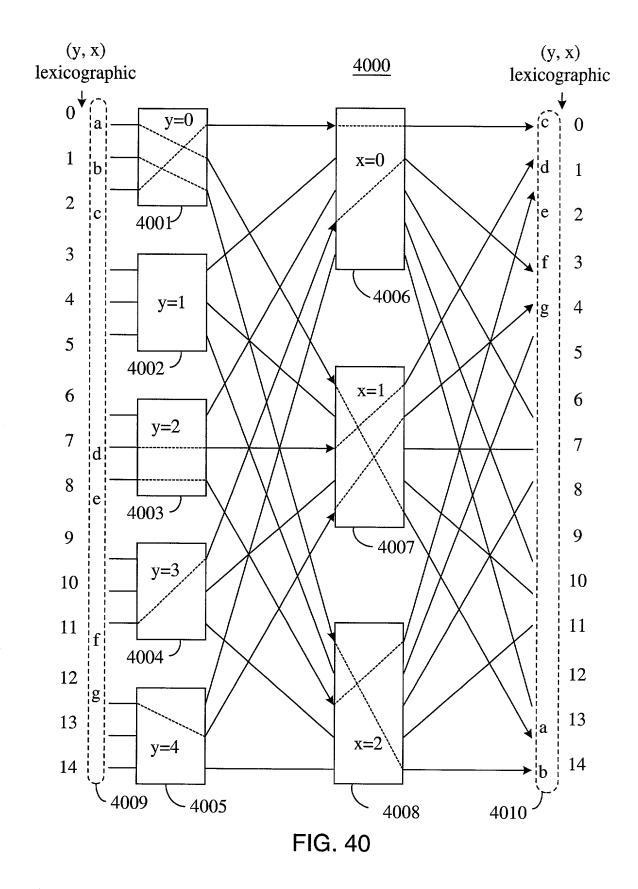


FIG. 39



4100

Preservation of the (1) compressor, (2) upturned compressor and (3) UC nonblocking properties of a switch

Recursive 2X constructions from arbitrary building blocks

Recursive 2X constructions from cells

Banyan-type networks with monotonically decreasing trace and guide

4110

Preservation of the (4) decompressor, (5) upturned decompressor.

- o) upturned decompressor, (6) CU nonblocking,
 - (7) expander,
- (8) upturned expander and (9) circular expander

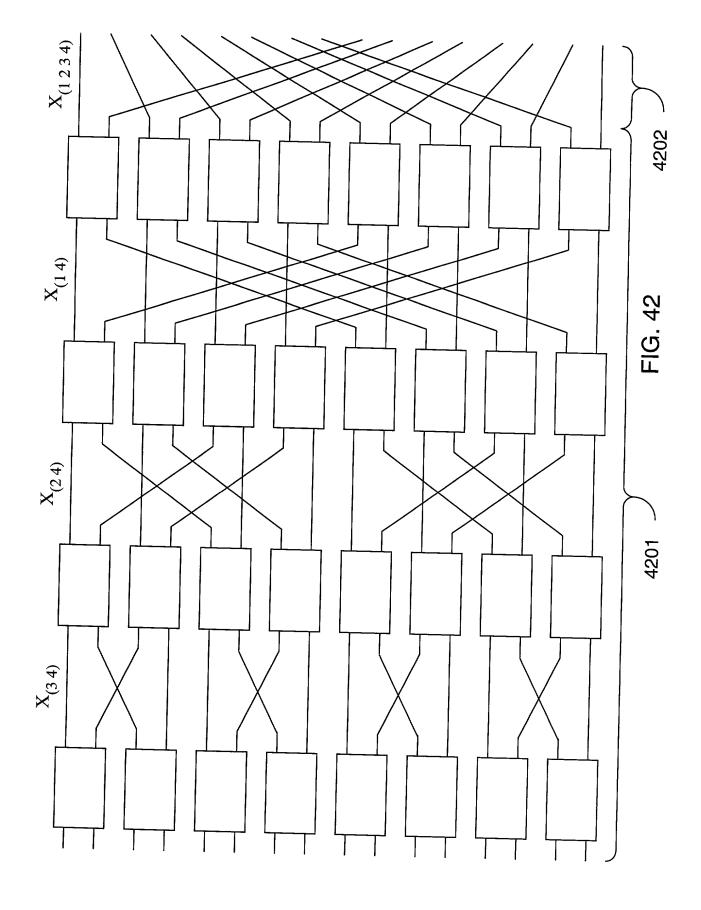
properties of a switch

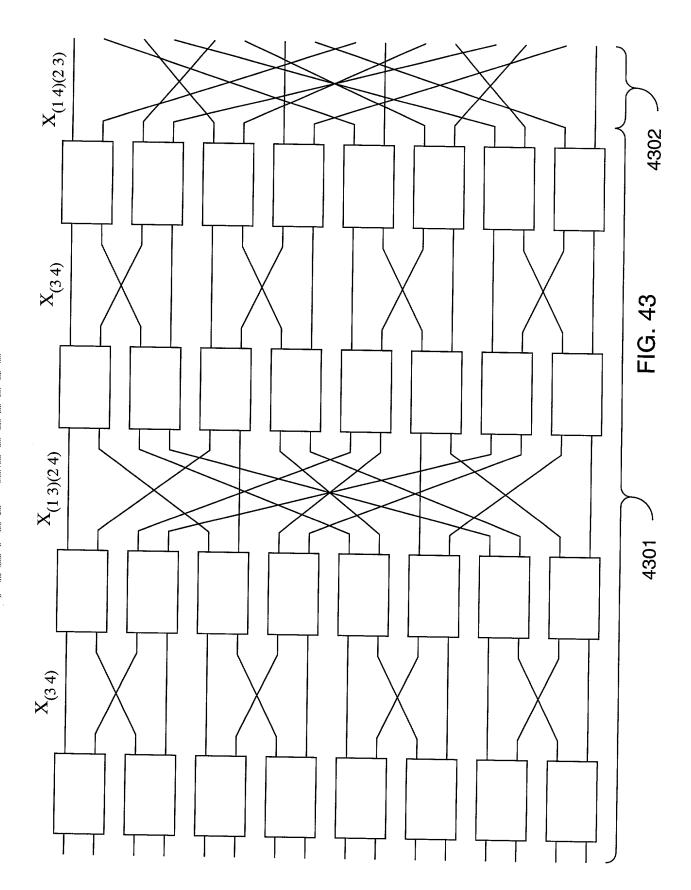
Recursive X2 constructions from arbitrary building blocks

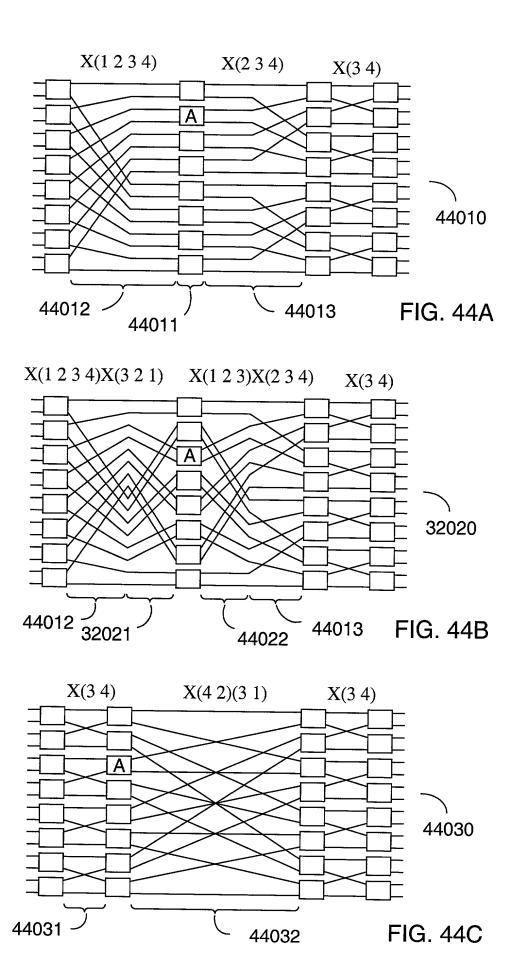
Recursive X2 constructions from cells

Banyan-type networks with monotonically increasing trace and guide

FIG. 41







Equivalence banyan-type in stronger networks among sense match of output exchange only (<==> common guide among Equivalence requiring the the networks) (<==> common trace and guide Equivalence without requiring the match of I/O exchanges Equivalence requiring the match of I/O exchanges among the networks) (unconditional) match of input exchange only (<==> common trace among Equivalence requiring the the networks) 4500

FIG. 45

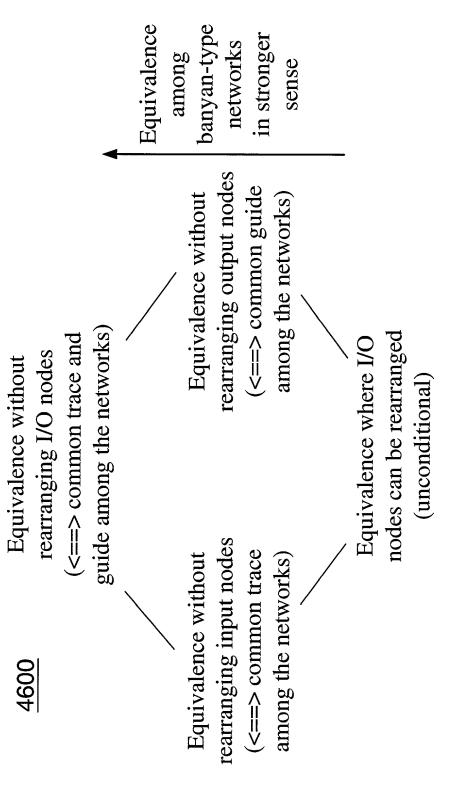


FIG. 46

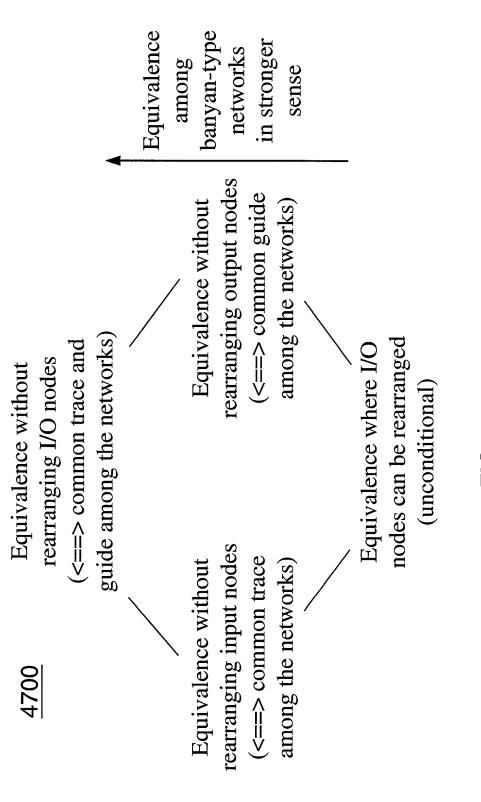


FIG. 47

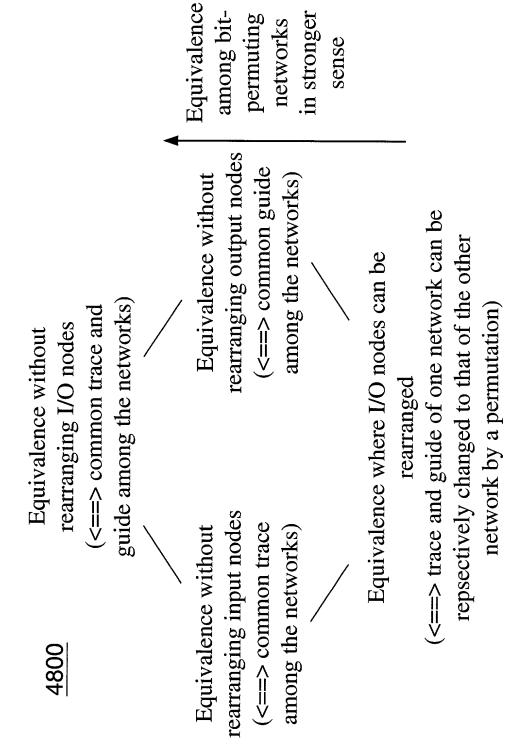
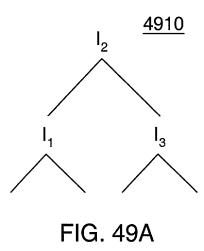
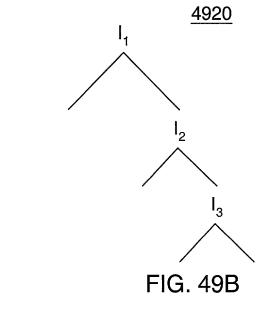
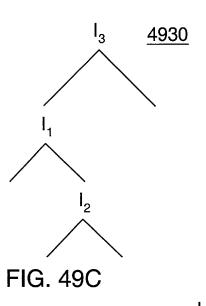
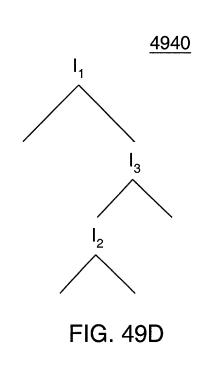


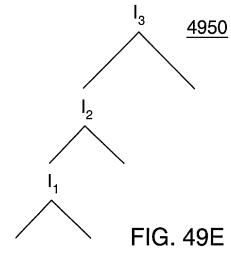
FIG. 48

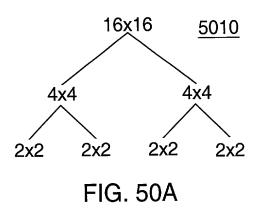












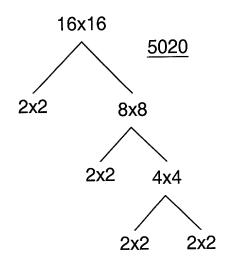
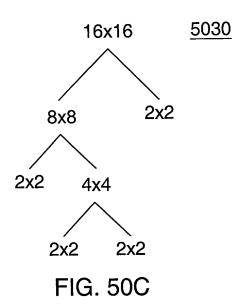
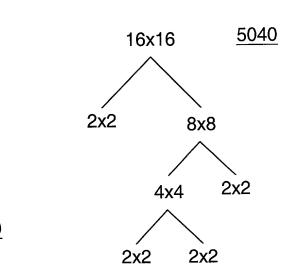


FIG. 50B





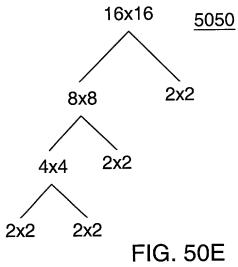


FIG. 50D

<u>5100</u>

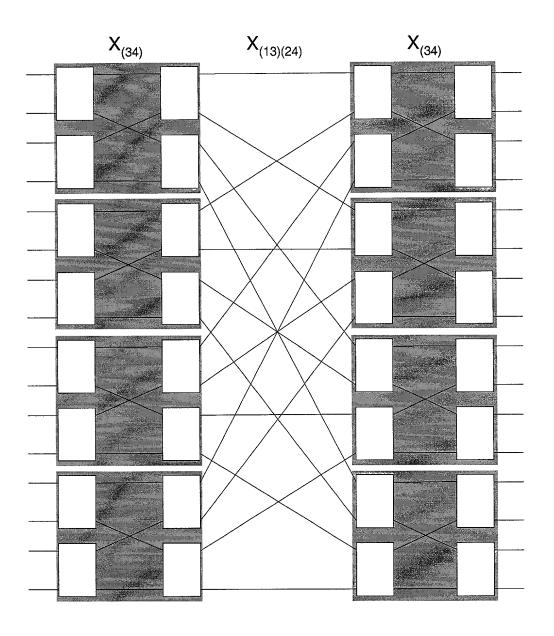


FIG. 51

<u>5200</u>

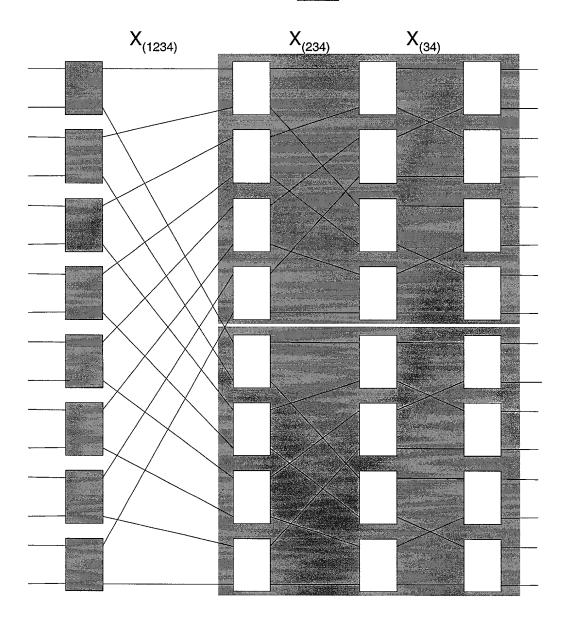
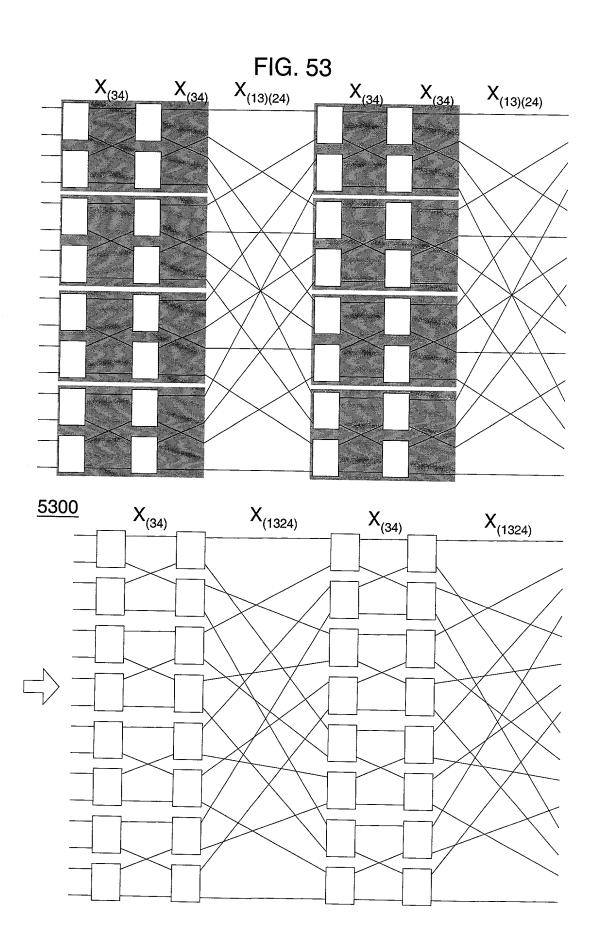


FIG. 52



<u>5400</u>

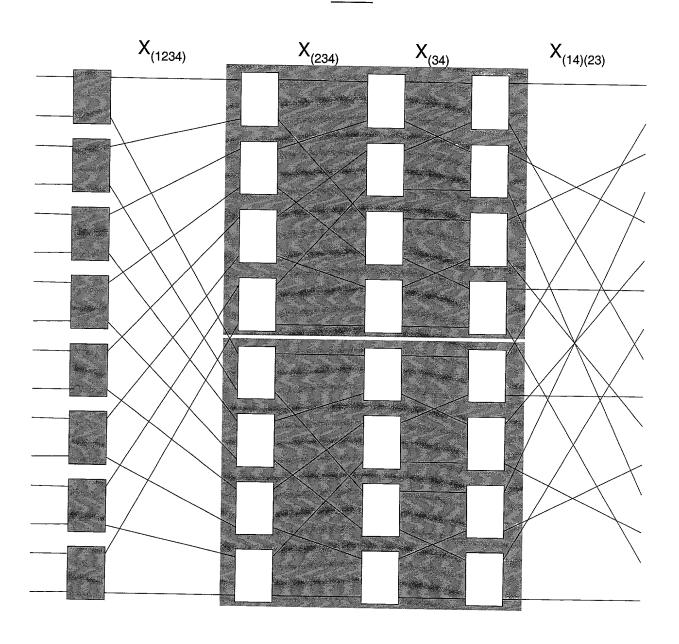
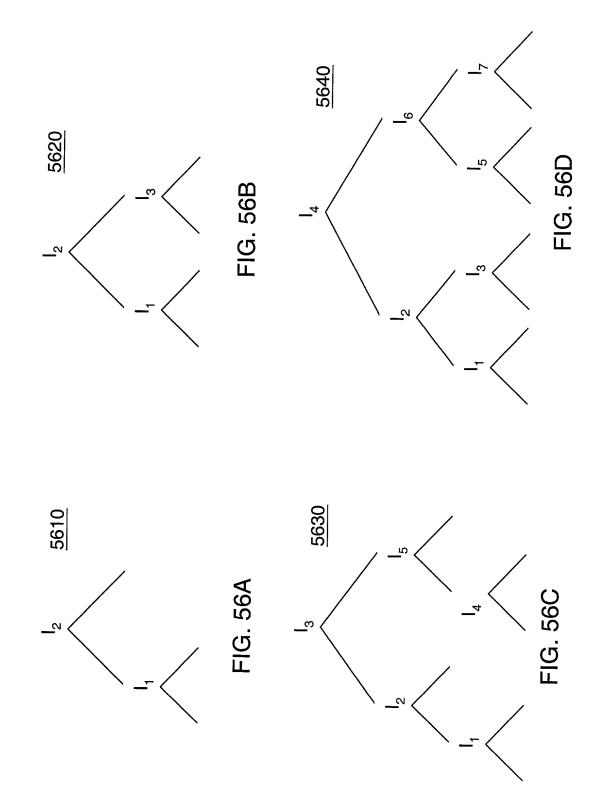
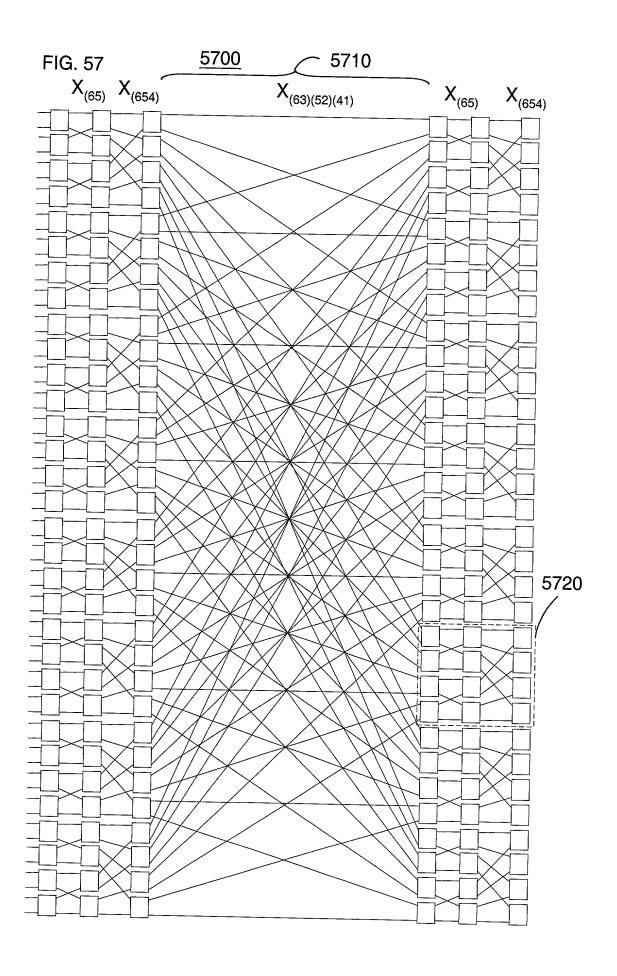
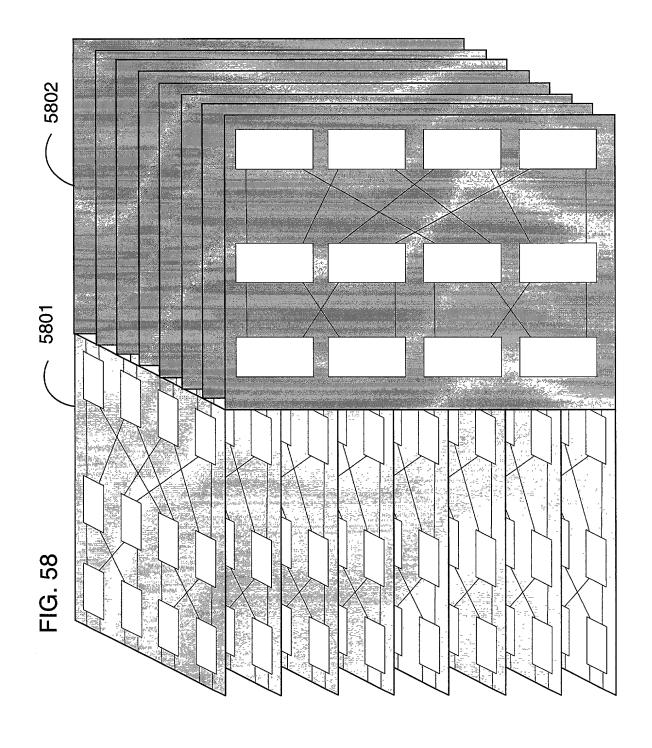


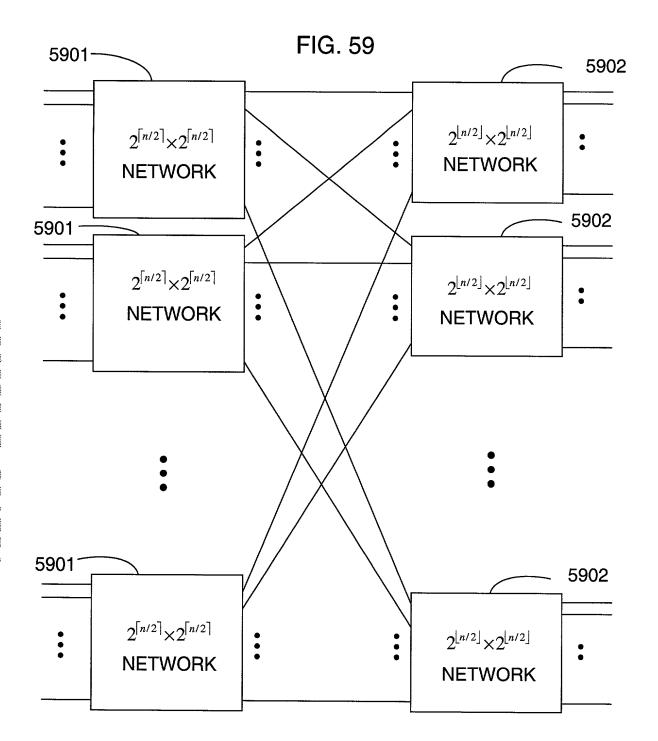
FIG. 54

FIG. 55









<u>6000</u>

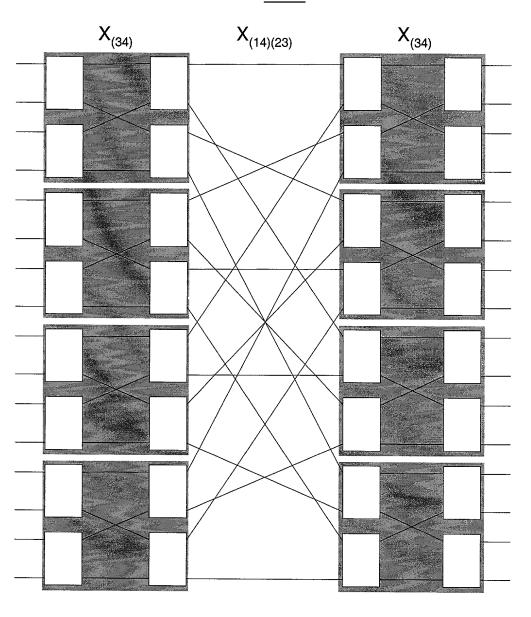
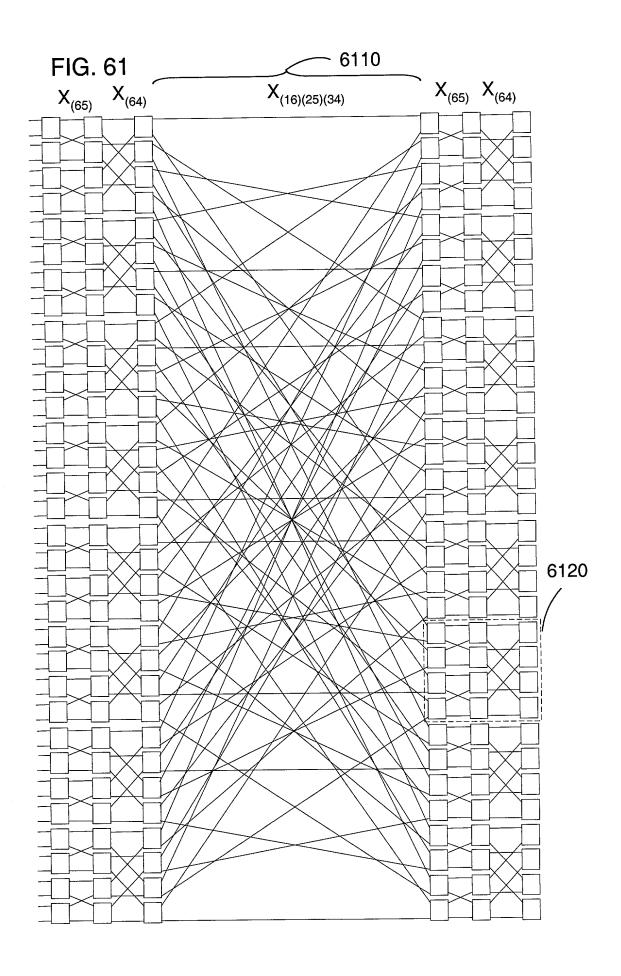


FIG. 60



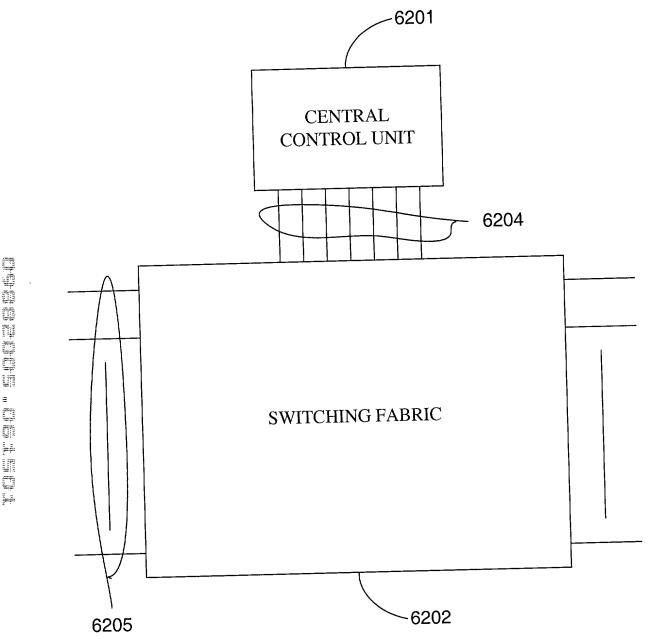


FIG. 62A

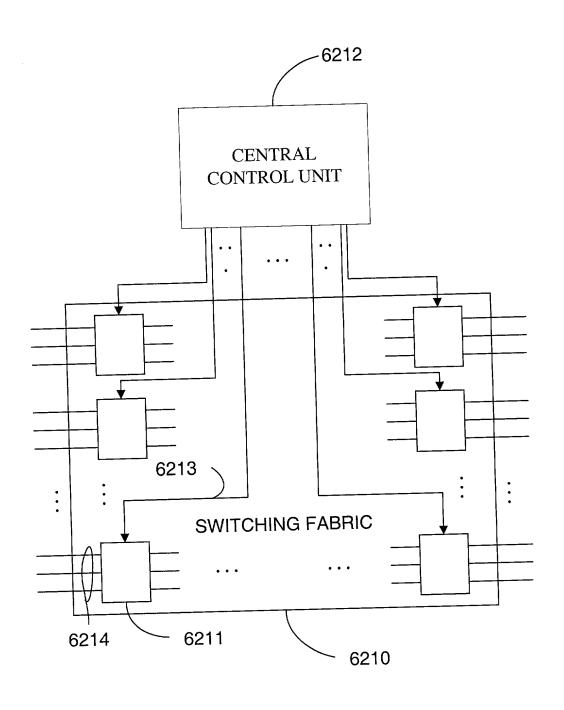
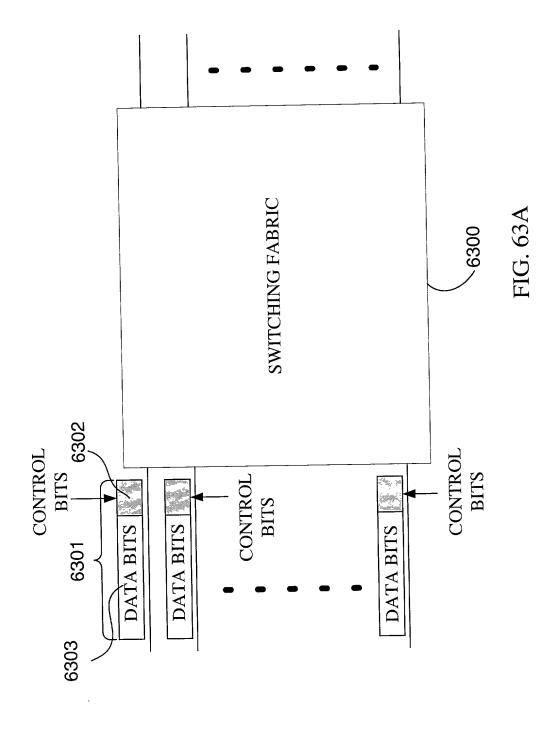


FIG. 62B



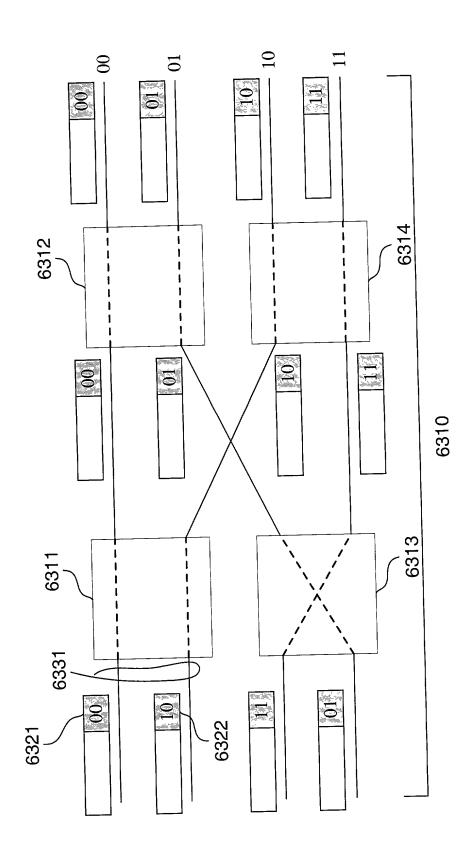


FIG. 63B

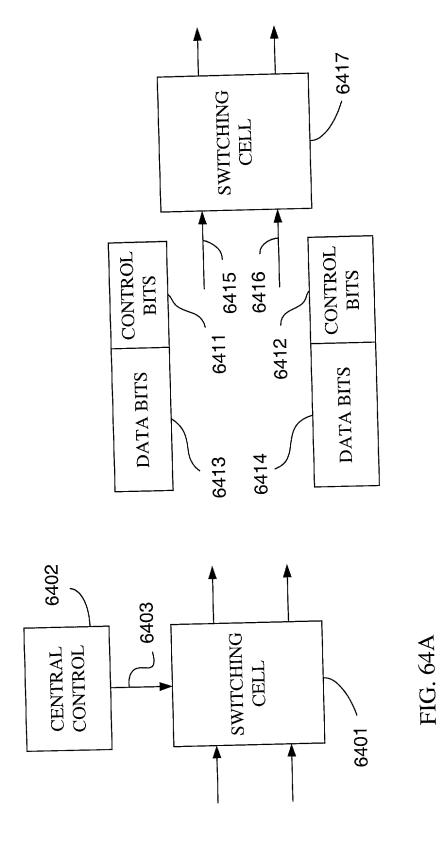
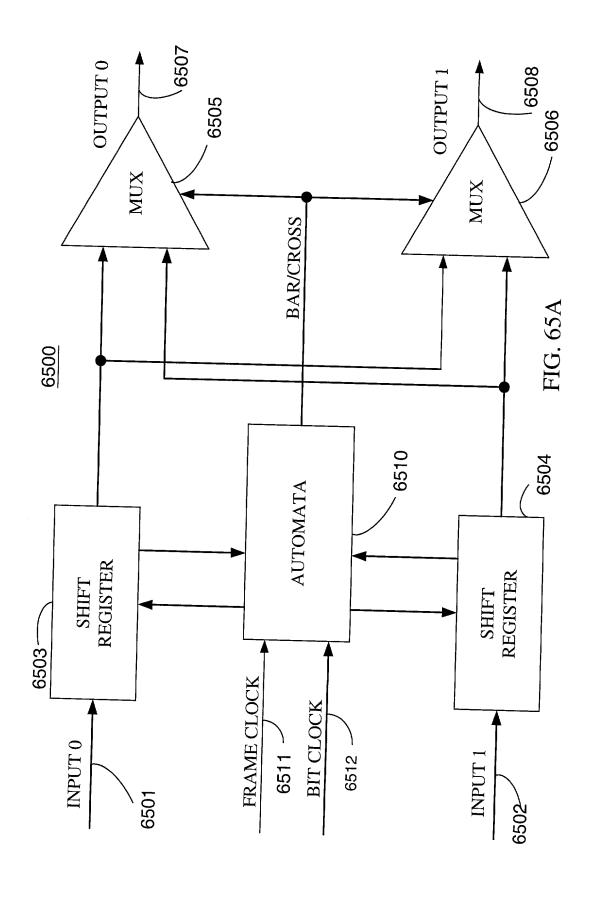


FIG. 64B



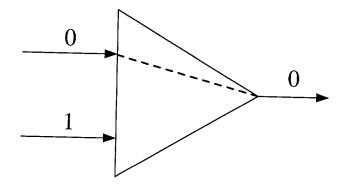


FIG. 65B

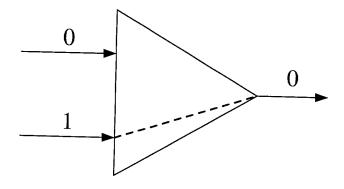


FIG. 65C

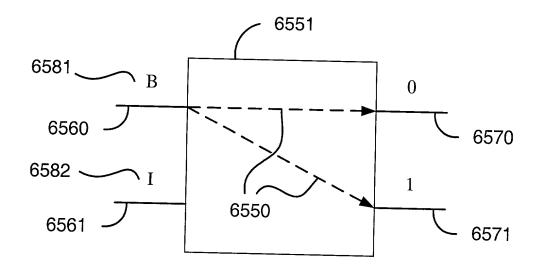


FIG. 65D

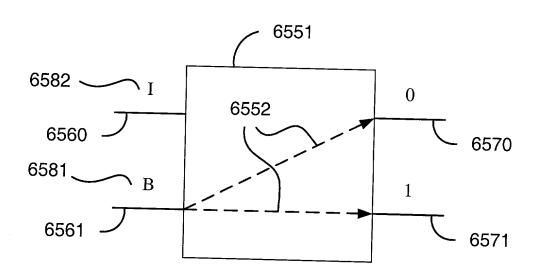


FIG. 65E

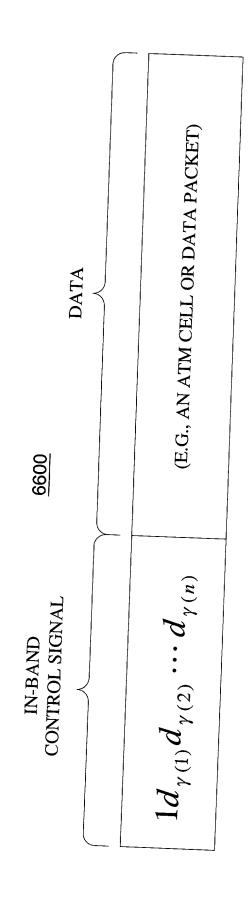


FIG. 66A

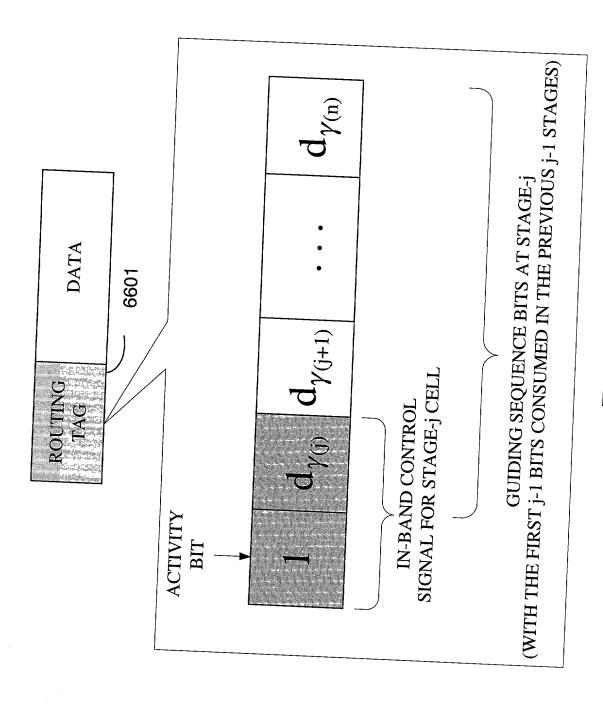


FIG. 66B

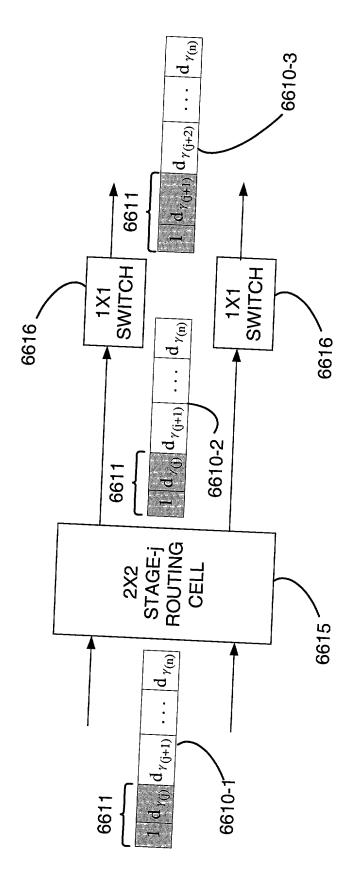
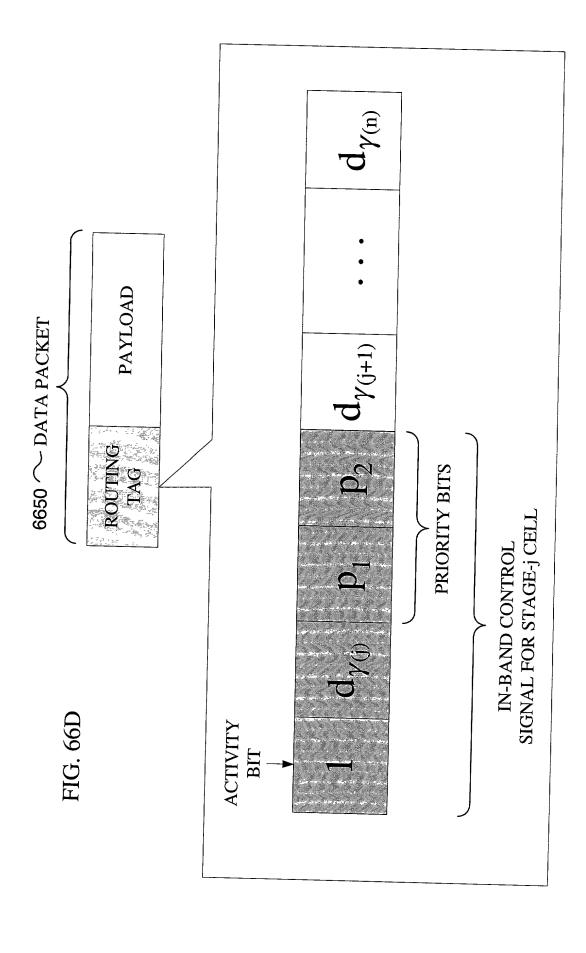
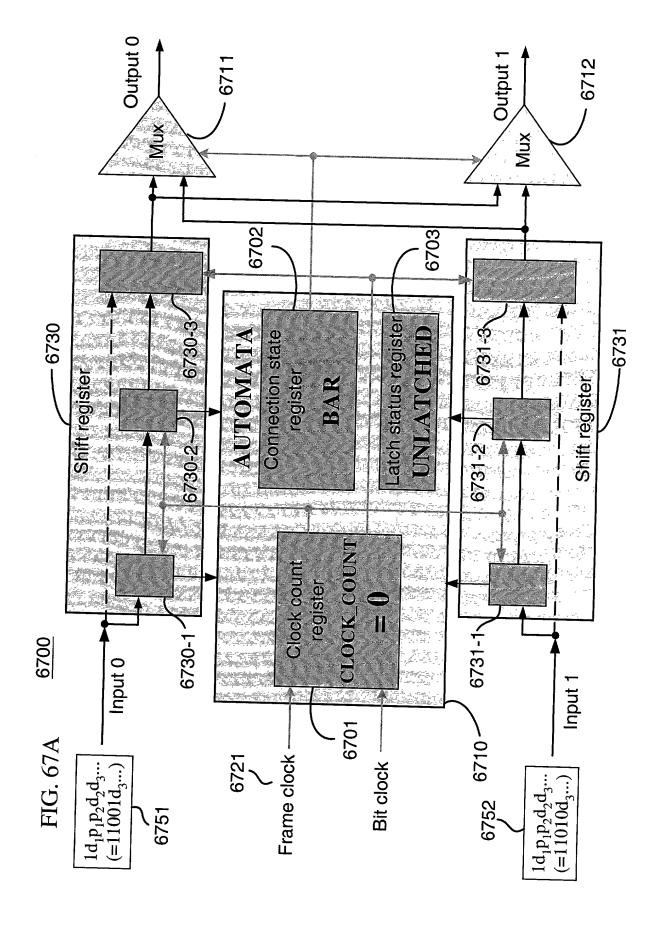
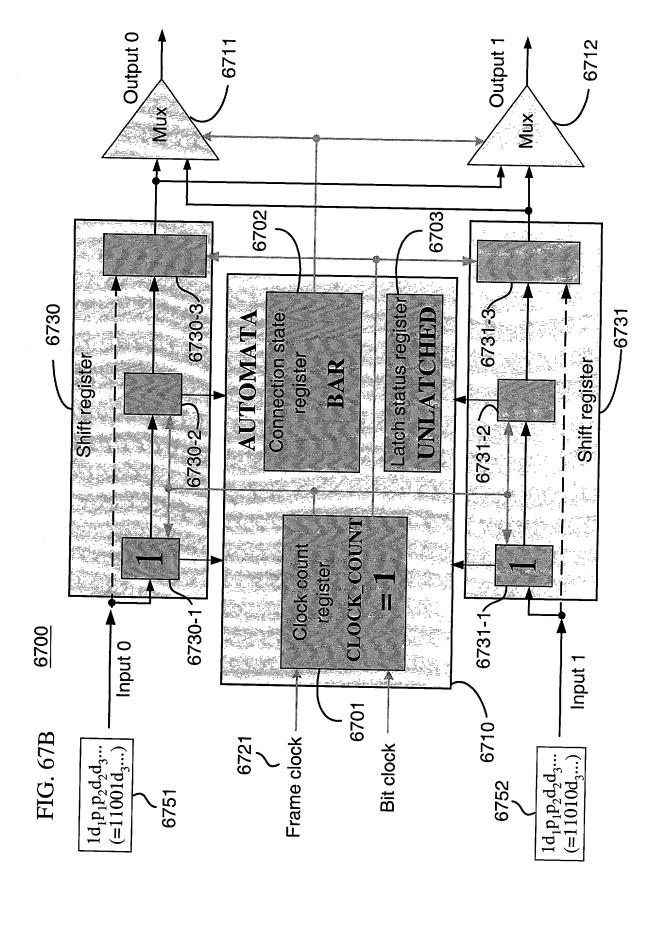
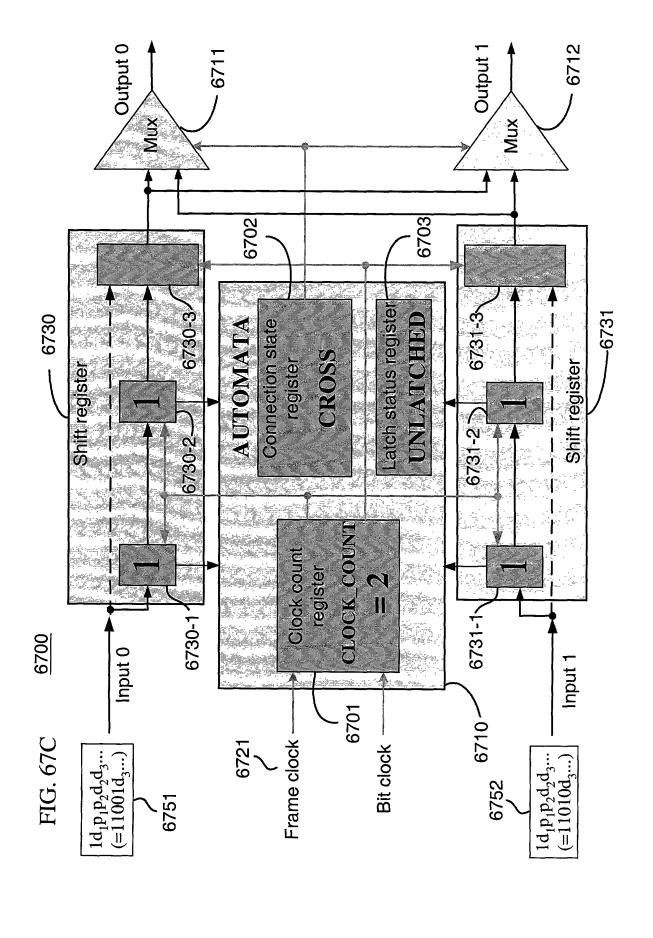


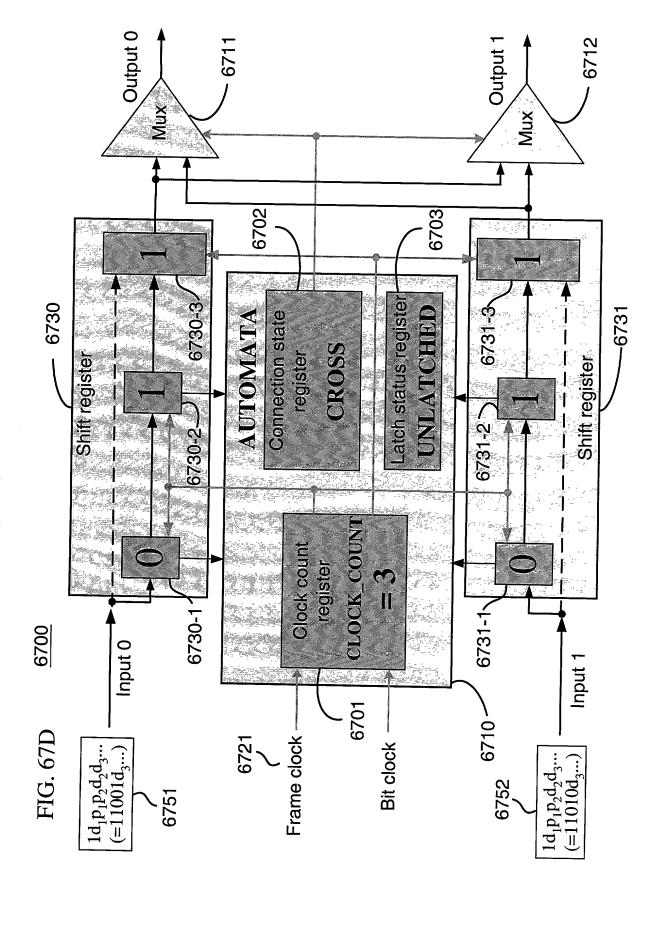
FIG. 66C

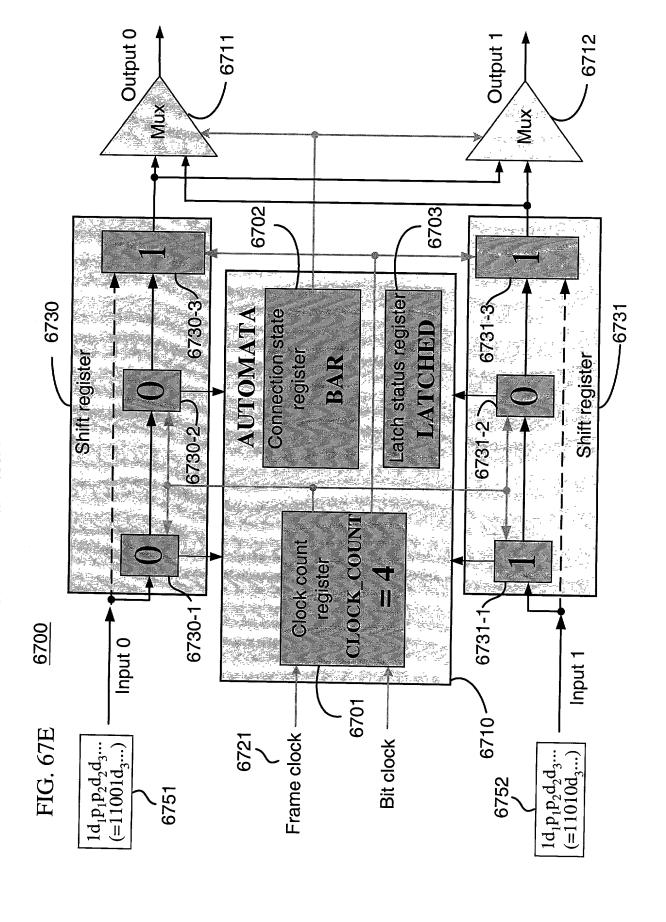


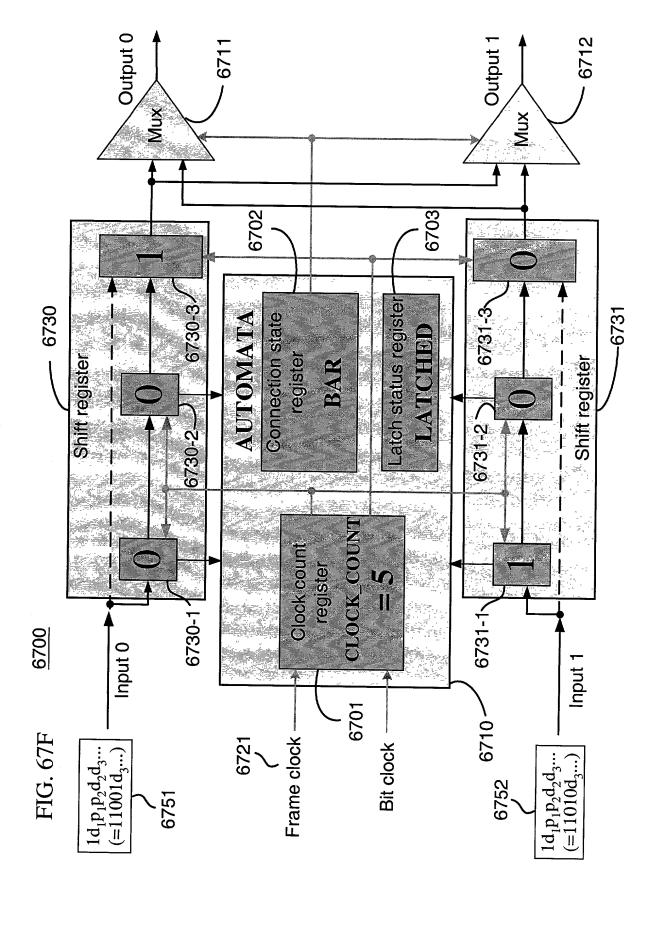












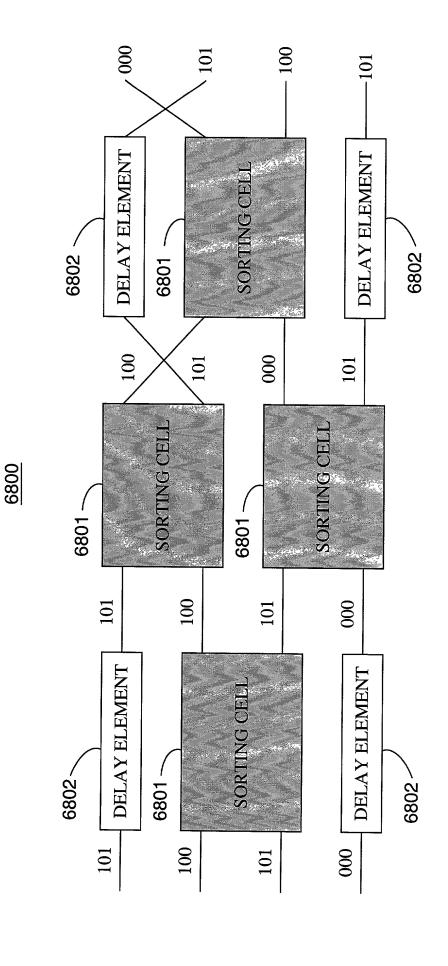
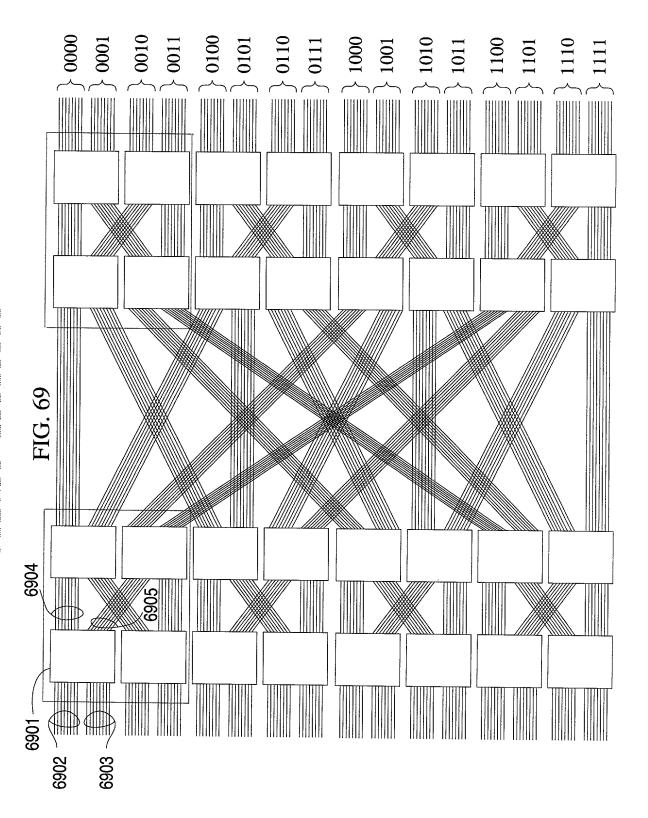
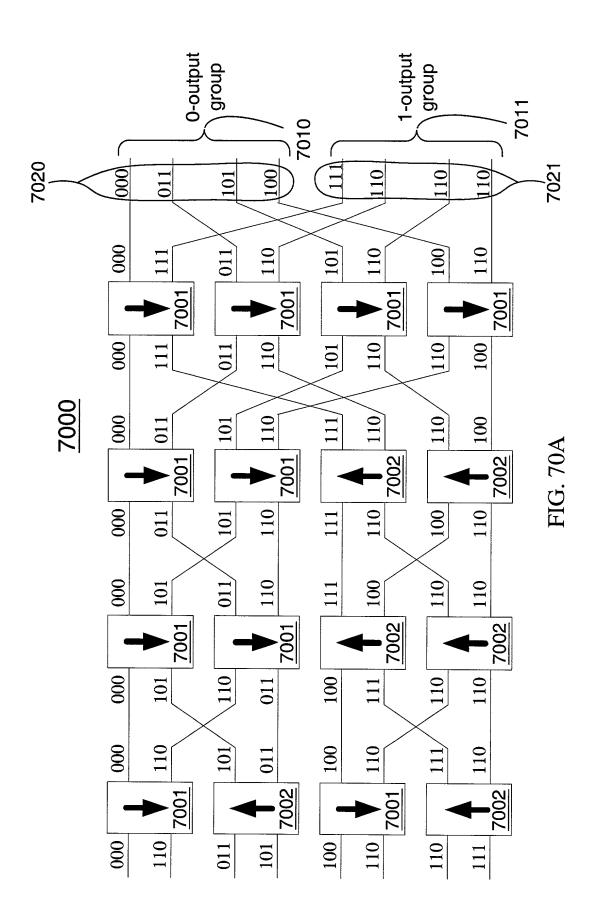
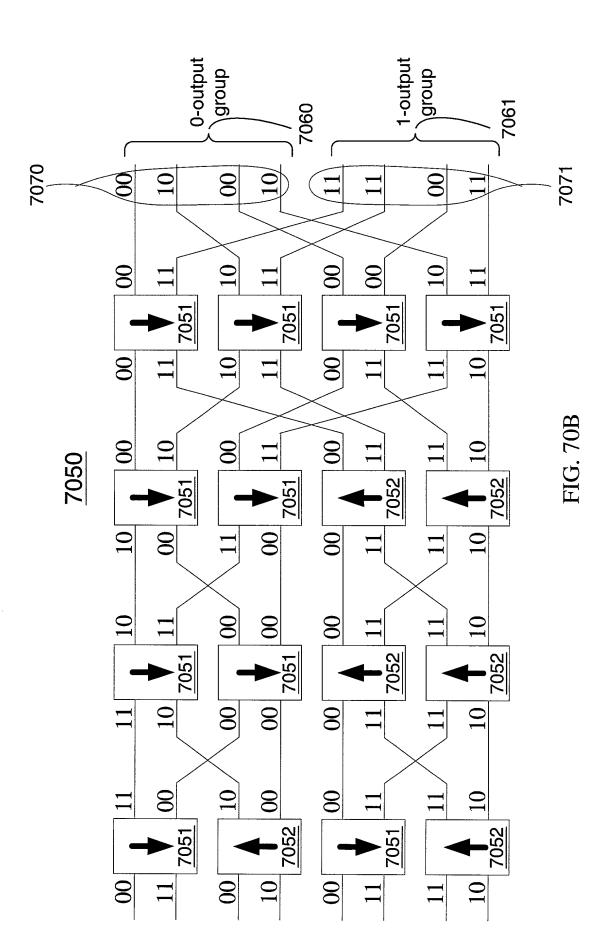


FIG. 68







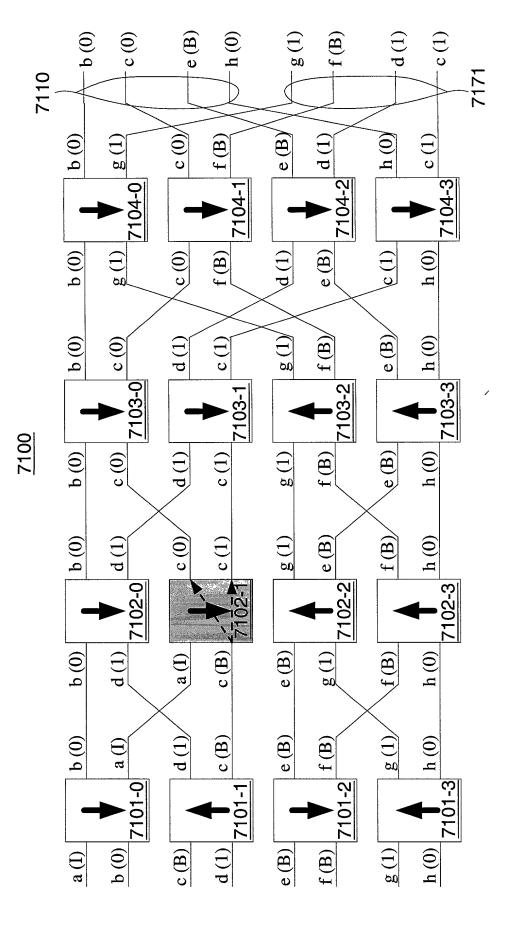


FIG. 71A

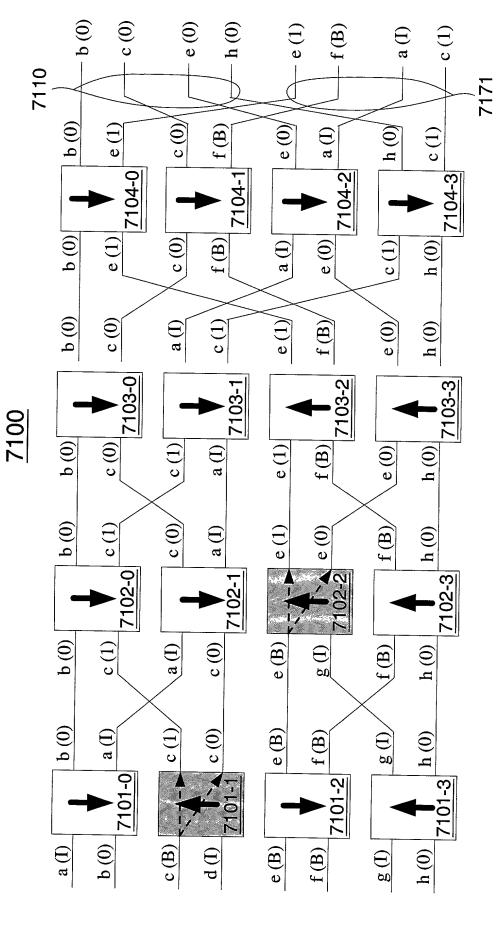


FIG. 71B

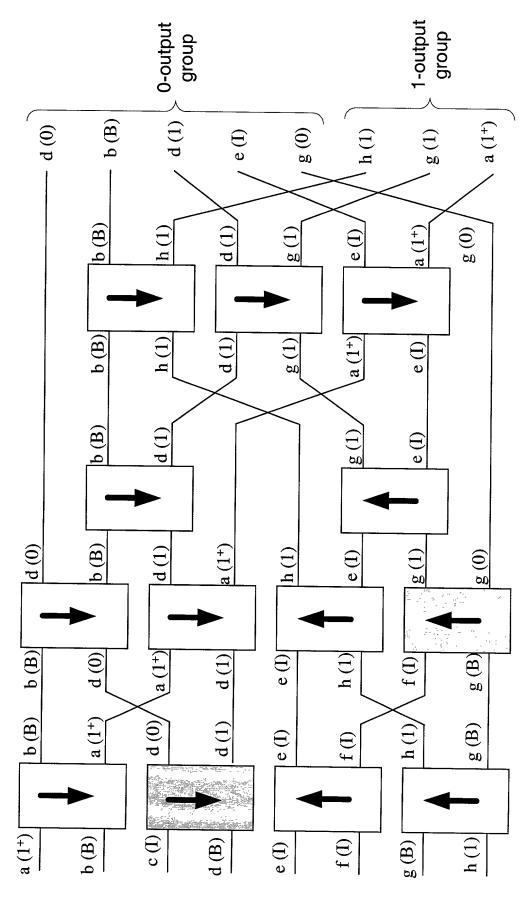


FIG. 72A

